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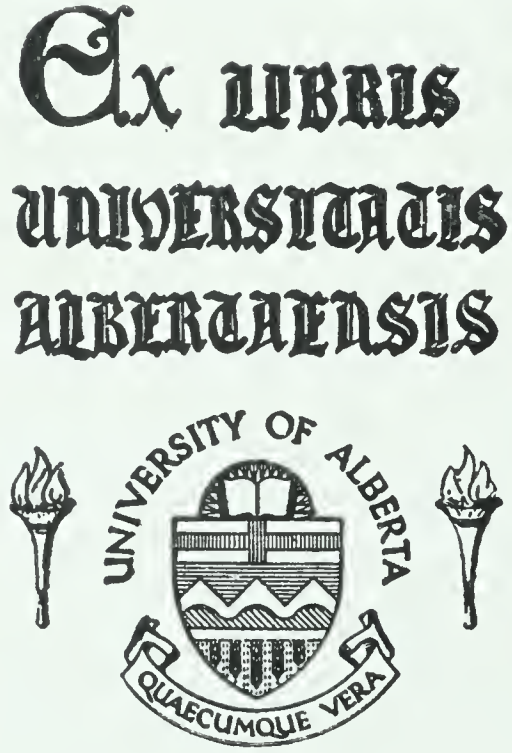

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THE UNIVERSITY OF ALBERTA

THE CAMPUS FRINGE OF THE UNIVERSITY OF ALBERTA

by

ROBERT FRANCIS WINDSOR

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

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FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled The Campus Fringe of the University of Alberta, submitted by Robert Francis Windsor in partial fulfilment of the requirements for the degree of Master of Arts.

ABSTRACT

The study of campus fringes of universities has received little attention in Geography up to the present time. In general terms the campus fringe is that area adjacent to the university. The main purposes of this thesis are to delimit the campus fringe of the University of Alberta; to determine the characteristics of the fringe; and to note how the University has influenced it. This influence is best indicated in terms of the distribution patterns of the University population, and the University-related uses, such as rooming accommodations, fraternity houses and parking.

The University of Alberta campus is enclosed on three sides by residential districts, and on the fourth by the North Saskatchewan River. It was found that the location and characteristics of the residential districts influence the extent of the campus fringe. Such characteristics as the age, condition, and size of housing have a bearing on the suitability of an area for rooming accommodations. The older districts, especially the ones closest to the main academic complex, have provided most of the accommodations in the fringe, while zoning regulations have limited the amount of accommodations available in the newer districts.

The greatest demand for rooms comes from the out-of-town students. These students, who comprised over 55% of the total enrolment of 7356 in 1962-63, seek accommodation as close to the campus as possible. The size of this University group and the availability of accommodations in

various parts of the fringe largely determine the extent of the campus fringe.

A number of major developments are proposed or under way which will physically alter the area most influenced by the University. This will result in the relocation of many of the University-related uses, and the redistribution of a substantial number of the University population.

ACKNOWLEDGEMENTS

I would like to express my appreciation to my supervisor, Dr. W.C. Wonders, for his interest and constructive criticisms of submitted material; to Professor P.J. Smith for his helpful comments; and to Professor A.A. Ryan and the Campus Planning Committee for their interest in the thesis.

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The University of Alberta and
part of the campus fringe, 1963

CHAPTER I

INTRODUCTION

Universities throughout North America have experienced tremendous growth during the past decade. Facilities are being heavily taxed by the large and ever increasing student enrolments. Major building programs have been undertaken to meet the increased demands and much of the available open space on the campuses has been drastically reduced. Vertical expansion has helped relieve some of the land pressure but most universities have found that horizontal expansion is also required. As a result, there is an increasing awareness on the part of university authorities to look outward and to examine the adjacent districts to determine the most suitable direction of expansion.

The University of Alberta at Edmonton has reached the stage in its development where physical expansion into a neighbouring district is required. This district is North Garneau[1] which eventually will be used for University purposes. At the present time, however, the only action being taken is the purchase of individual houses. In addition to this start towards future expansion another development is taking place in adjacent South Garneau where parts of that district are being zoned for high rise apartments and university commercial uses.

Because of these recent developments the time seemed opportune to make a "campus fringe" study before expansion and zoning alter the

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[1] For greater convenience the neighbourhood of Garneau has been subdivided into two, North and South Garneau.

complexion of the districts most intimately associated with the University. As a result of the physical changes there will be a marked redistribution of the University population and reorientation of University-related uses. Thus, the areal relationships and population patterns which developed naturally as a result of the presence of the University will change. The desire to study the campus fringe before these changes occur was one reason for undertaking this topic. Areal relationships and population patterns are important features of Urban Geography, and it is in the analysis of these features that this thesis hopes to make some geographical contribution.

Interest in the campus fringe was stimulated after reading copies of seven campus fringe papers[2] which were presented at the Annual Meeting of the Association of American Geographers in 1962.[3] Although most of the studies were only in their preliminary stages some were valuable as guide lines in formulating a method of approach to the study of the campus fringe of the University of Alberta.

Since there is a paucity of material on the subject of the campus fringe, few comparisons will be made with other universities. Unfortunately, a potentially useful study prepared by Wayne State University which analyzed developments at different universities has been delayed in printing.

OBJECTIVES

As campus fringe studies are a recent development in Geography it

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[2]At the present time there is no standard definition of the campus fringe. The definition used in this study is introduced in Chapter II.

[3]Alexander, John, "The Campus Fringe---A Landscape Phenomenon" (Abstract), A.A.A.G., Vol. 52, Sept. 1962, p. 318.

was felt that a part of the thesis should be devoted to the delimitation of the campus fringe using as criteria information gathered on University-related uses and the distribution of the University population. This delimitation included a subdivision of the area into an inner and outer zone to differentiate the sections most influenced by the University.

A second objective was the examination in some detail of the districts surrounding the campus for the purpose of determining the characteristics of the campus fringe; the degree of impact of the University on the different parts of the fringe particularly as reflected in the types of land use; and the distribution patterns of students, faculty and staff.

A third objective was to map and study the areal relationships of the districts in reference to the University before these relationships become badly distorted as a result of new zoning and University expansion.

The final objective which follows closely from the previous one was to suggest possible relocations of University-related uses and the redistribution of the University population.

THE STUDY AREA

The University of Alberta at Edmonton is situated on the south side of the North Saskatchewan River. The river has cut a deep meandering valley through the flat lacustrine plain upon which Edmonton has been built. The river valley forms the only noticeable relief feature in the area. At the northern edge of the campus there is a steep drop of some 200 feet to the river below. In the autumn the mixed coniferous and deciduous trees along the north-facing slopes of the valley produce a vivid picture of green and gold --- the University's colours.

The site chosen for the campus was a 258 acre parcel of land known

as River Lot Five. It was purchased in 1908 by the Government of the Province of Alberta. Figure 1 shows the site and situation of the campus* in relation to the City, the North Saskatchewan River and the adjacent residential districts. The campus is bounded on the north by the river, on the east by 112 Street, on the south by University Avenue, and on the west by 116 Street from Saskatchewan Drive to 87 Avenue and by 117 Street to University Avenue. Also indicated on Figure 1 are the seven residential districts which comprise the campus fringe study area.

The University serves the whole Province and because of this a high percentage of the total enrolment is accounted for by out-of-town students. This has been an important factor in influencing the campus fringe since many students seek accommodations as close to the campus as possible. According to statistics gathered for this thesis in 1962-63 only 25.7% of the out-of-town students were accommodated in on-campus residences while almost 84% of the remaining out-of-town students were residing in the campus fringe. (See Tables 2, 3 and 4.) It should also be noted here that since the development of the University of Alberta, Calgary campus, there has been a gradual decrease in the percentage of out-of-town students to the total enrolment. This is reflected in the steady drop from 69.5% during the peak year of 1953-54 to 55.9% in 1962-63. However, the total numbers of this segment of the University population is still substantial and is still increasing.

Before an actual start could be made in the collection of detailed statistics it was necessary to determine approximately the area which would include all the campus fringe. It was felt that the best indicator for this purpose was the distribution of students, faculty and staff of the University according to Metropolitan Edmonton Traffic Zones. The

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*The term "campus" as used in this study includes the main academic complex and the areas under the jurisdiction of the Hospital Board and the Dept. of Public Works.

FIGURE 1

SITE and SITUATION of the CAMPUS FRINGE

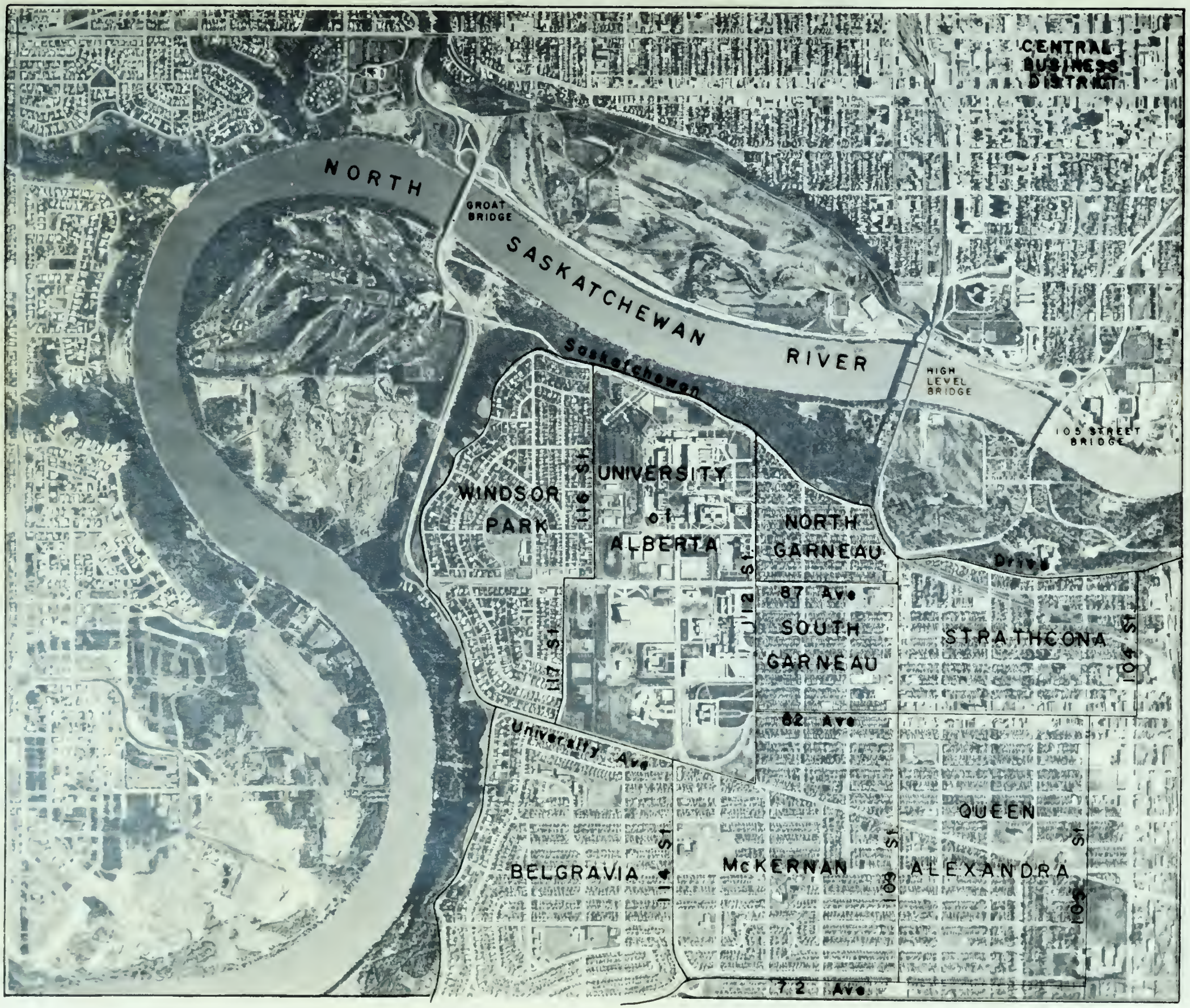
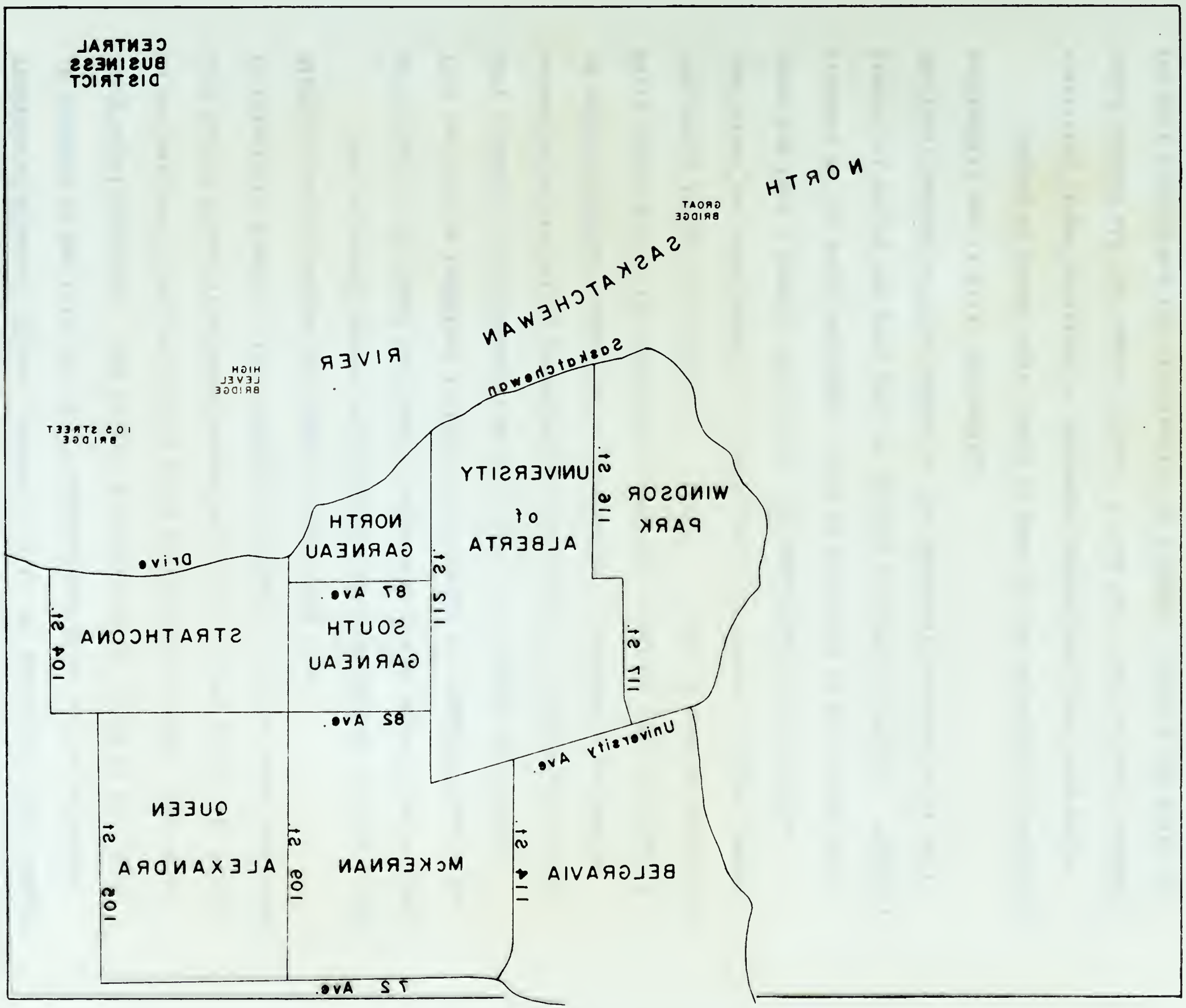


FIGURE 1

SITE and SITUATION of the CAMPUS FRINGE



basis for delimitation was the total University population (sum of students, faculty and staff) per net residential acre in each zone. This density measure seemed most suitable for indicating roughly the degree of influence the University has on different parts of the City.

The information used to determine the approximate campus fringe area included land use acreages from the Metropolitan Edmonton Transportation Study (M.E.T.S.) and a University population distribution survey conducted in 1961 by Professor J.J. Bakker of the Department of Civil Engineering in conjunction with the Edmonton Transportation System.[4] The survey analyzed the distribution of faculty and staff, undergraduates and graduates by traffic zones with the purpose of reorganizing the bus routes serving the University.

The total University population was added for each zone and then the density by net residential acre was calculated for the most populated zones. Figure 2 shows that the highest densities occur in zones 2010, 2020, 2230, and 2310. There is a sharp drop in density in the adjacent zones of 2110, 2220, 2320, and 2340, followed by a further rather sharp decline in the remaining zones where the densities were less than one University person per net residential acre. It was possible to eliminate the more distant zones on the north and south sides of the river because of their lower densities. The zones specified above appear to be the ones most directly influenced by the University and the area they cover served as a guide for a detailed plotting of the University population.

Plotting the distribution of undergraduates, graduates, and faculty

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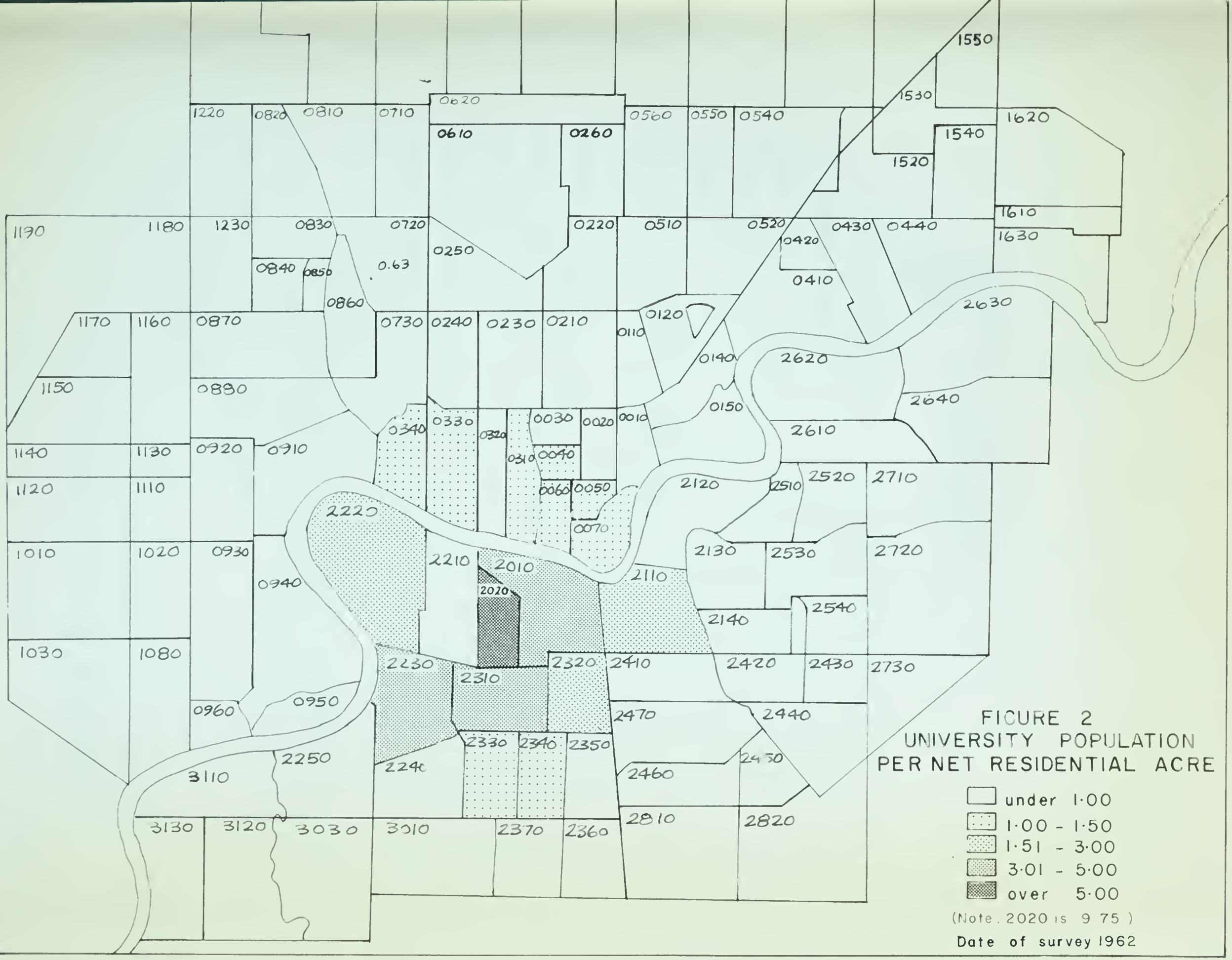
[4]Land use statistics for M.E.T.S. were obtained from the City of Edmonton, Planning Department.



FICURE 2
UNIVERSITY POPULATION
PER NET RESIDENTIAL ACRE

- under 1·00
- 1·00 - 1·50
- 1·51 - 3·00
- 3·01 - 5·00
- over 5·00

(Note. 2020 is 9 75)

Date of survey 1962

and staff was based upon the 1962-63 winter session registration forms for the students and the address lists for the faculty and staff. Altogether six categories were used:

1. Undergraduate - non-permanent address[5]
2. Undergraduate - permanent address
3. Graduate - non-permanent address
4. Graduate - permanent address
5. Faculty
6. Staff

This breakdown enabled a more accurate picture to be obtained of the locations where out-of-town students were residing during the winter session. This distribution was particularly important in the delimitation of the campus fringe. The distribution of the six categories is presented in Chapter III, Figures 8, 9 and 10. Plotting was done on a house by house basis for North and South Garneau and on a block by block basis for the other districts. From the resultant maps it was possible to make further modifications to the initial study area and determine its final limits. These limits were formed on the north and west by Saskatchewan Drive, on the south by 72 Avenue, and on the east by 104 Street to 82 Avenue and then along 105 Street to 72 Avenue (see Figure 1). Within this area it is possible to differentiate an inner and outer zone of the campus fringe and this will be discussed in Chapter II.

The campus fringe as outlined above was then subdivided into seven districts (see Figure 1) which roughly correspond to the neighbourhoods surrounding the campus. They include:

1. North Garneau[6]
2. South Garneau
3. Belgravia

---

[5]The address refers to the city address used during the winter session, thus a non-permanent student is an out-of-town student.

[6]North and South Garneau form one neighbourhood but have been subdivided for purposes of analysis.

4. McKernan
5. Strathcona
6. Queen Alexandra
7. Windsor Park

With this breakdown a better comparison of the different districts was possible. The most detailed information was available for Garneau. If time had permitted each district should have been examined on a similar basis.

METHOD OF APPROACH

In order to examine the impact of the University on the campus fringe it was necessary to have as detailed information as possible on population characteristics, physical characteristics and land use.

In the chapter on population a general description of the size and age of the population, number of families, household size and other characteristics is made. Of more importance to this study is the distribution of students, faculty and staff to note their patterns in relation to the University.

Examination of the physical characteristics and land use formed the other main aspect of research. Special emphasis was placed on the residential and commercial uses since they are most directly influenced by the University. Analysis of the different residential categories, housing characteristics, rooming-house conversions and other rental accommodations form an important part of this section. Once this information was collected it was then possible to analyze the campus fringe and to evaluate the impact of the University on the area.

Three questionnaires were used to gather additional information. One questionnaire dealing with the importance of location, past and present association with the University, and rooming accommodations was sent to

700 houses in the seven districts. A second questionnaire was sent to University-oriented houses, such as fraternities and off-campus residences, while the last questionnaire was used to determine the University impact on commercial uses. Frequent reference will be made to the results of the three questionnaires.[7]

Throughout the study comparisons will be made between the seven districts in the campus fringe to note the similarities and differences in University-related uses and to observe how each of these districts has been influenced by the presence of the University.[8]

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[7] Questionnaires A and B are included in Appendix C.

[8] For a discussion of the procedural techniques used in the thesis see Appendix B.

CHAPTER II

NATURE OF THE CAMPUS FRINGE

DEFINITION AND DELIMITATION

The campus fringe is that area adjacent to the campus where the major concentration of University-related uses and the University population occur. The extent of the campus fringe, or fringe, is indicated by the distribution patterns of the uses and the population. Because of the variations in the density of concentration of both it is possible to subdivide the fringe into an inner and outer zone.

Housing accommodations for the University population consisting of private homes, rooming-house conversions, off-campus residences and fraternity houses, form the majority of University-related uses. Two other uses of importance are parking and houses converted for University purposes. The University population includes the six categories which were mentioned in Chapter I. A detailed description of the University population, University-related uses and the influence of the University on other land uses in the fringe is presented in Chapters III, IV and V. Since most of the University-related uses are associated with housing accommodations it is readily apparent how both these uses and population distributions are closely correlated.

THE INNER ZONE

The inner zone refers to that part of the campus fringe where the greatest concentration of University-related uses occurs and the University population to total block population is 30% or more. This zone is in close proximity to the main nucleus of academic buildings and contains

all or most of the following uses: fraternity houses and other off-campus residences; houses converted for University purposes; parking and much of the rooming-house conversions.[1] In addition the University of Alberta Hospital has attracted some uses including several houses for graduate nurses' residences; doctors' offices, and a Nursing Aide School, all of which are also in the inner zone.

A percentage ratio of the total University population to the total population by block was used to determine the boundary of the inner zone.[2] This limit was considered to be 30% or more. Figure 3 shows the population ratios by block and indicates the degree of impact of the University on the campus fringe.

The highest block percentages occur between 110 and 112 Streets in North Garneau with an extension into South Garneau. Quite a sharp break exists between blocks having percentages above and below 30%, and it was for this reason that the boundary line for the inner zone was chosen to be the 30% line. Within this small zone are to be found ten of the eleven fraternity houses;[3] seven of the eight religious and other off-campus residences; 73.3% of the rooming-house conversions in Garneau; 68.9% of the University population in Garneau or 23.4% of the University population in the campus fringe; both women's residences operated by the University; and all houses converted for University purposes. The majority of the on-street parking which spills over from the campus also occurs in this zone.

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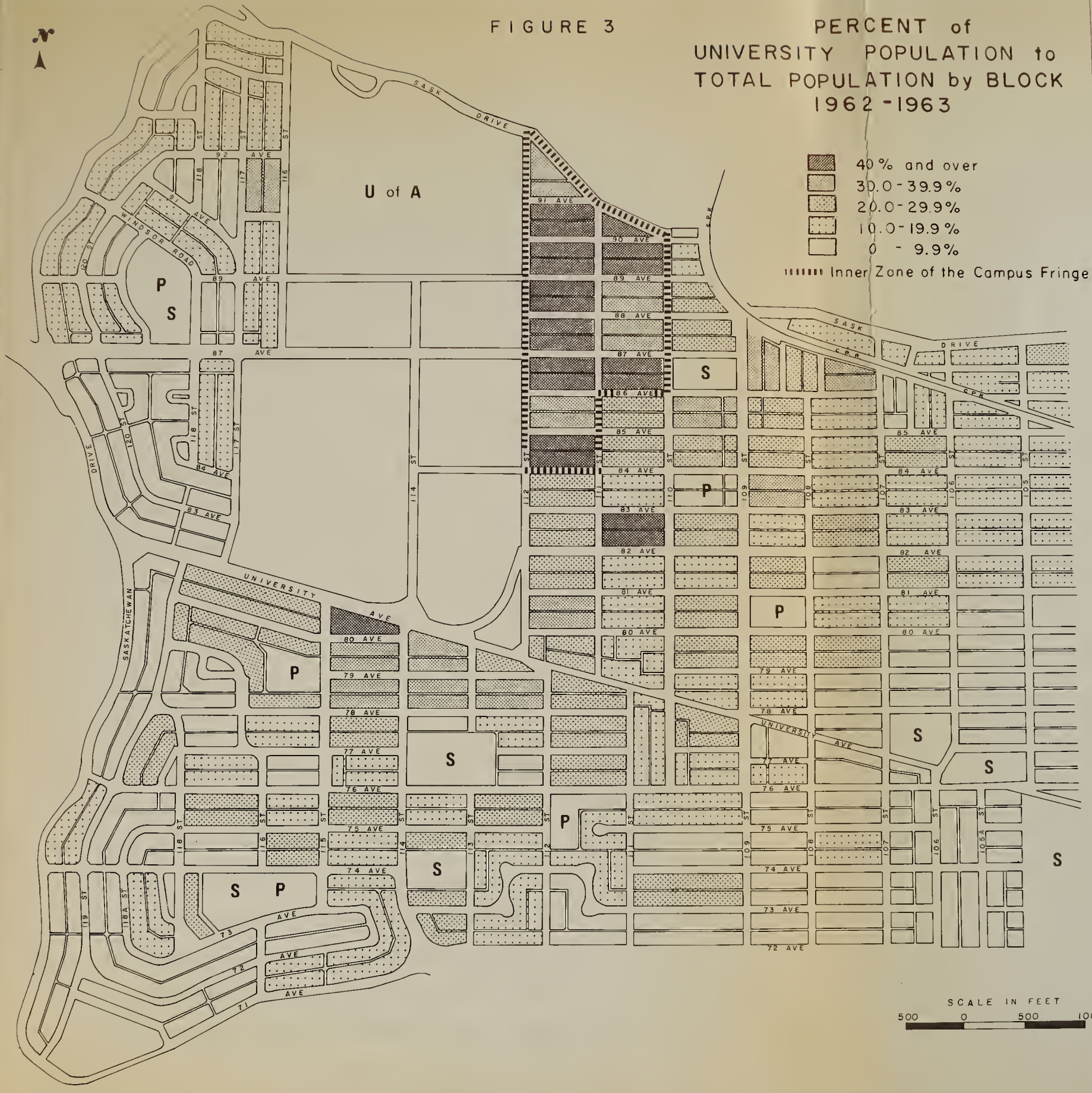
[1] A rooming-house conversion as defined by the City of Edmonton Assessor's Department and as used in this study includes converted older dwellings with over two families and rooming-houses licensed for five or more boarders or roomers.

[2] The total University population includes students, faculty and staff.

[3] As of September, 1964, it will be 13 of 14.

FIGURE 3

PERCENT of UNIVERSITY POPULATION to TOTAL POPULATION by BLOCK 1962 - 1963



A percentage ratio of total undergraduate and graduate students with non-permanent Edmonton addresses to the total block population was also calculated and when mapped showed a similar pattern to the above mentioned ratio. (See Figure 11.) This out-of-town segment of the total University population has had a major influence on the development of the campus fringe as will be seen in later chapters. Several density maps presenting University population per net residential acre by block were also compiled. Because they essentially showed comparable patterns to the percentage ratio maps they have not been included.

THE OUTER ZONE

The outer zone refers to that part of the campus fringe where the impact of University-related uses has been less intensive and the ratio of University population to total population was less than 30%. This zone is more distant from the main nucleus of academic buildings. It is characterized mostly by student rental accommodations consisting of private homes and a more scattered distribution of rooming-house conversions, and also by a scarcity of other University-related uses which are found in the inner zone.

Figure 3 shows that the outer zone is characterized by smaller percentage ratios than the inner zone with the exception of a small concentration of blocks to the south of the campus, and a few other scattered blocks in the fringe. The small concentration south of the campus was not considered part of the inner zone since it lacked most of the University-related uses. Generally the percentage ratios by block decrease outwards from the campus with only a minor increase occurring in blocks adjacent to major traffic arteries, such as 109 Street and 82 Avenue.

From Figure 3 it is also apparent that the degree of impact varies both in direction and extent.

East of the campus the percentages are almost all over 35% for a two-block depth decreasing to over 20% for the next two blocks. The remaining blocks to the edge of the campus fringe decline to only 10% or more. A somewhat similar pattern occurs to the south of the campus but it is not as wide nor as deep. There is a noticeable decrease in the impact of the University on the Queen Alexandra district which is southeast of the campus. A rather distinct almost straight line cuts diagonally across the district with the great majority of the blocks southeast of the line being under 10%. Of the few responses to questionnaire A in this section most residents stated that the location of their house to the University was of "no importance" or of only "minor importance." The influence of the University is noticeably less in the southeast corner and because of this the boundary of the campus fringe could have been modified to exclude much of this part of Queen Alexandra. If 1,000 foot radii are drawn from the campus using the Administration Building as centre then most of the blocks under 10% are over a distance of 6,000 feet. It appears that distance is an important factor influencing the extent of impact towards the southeast. Although some blocks in Strathcona, Belgravia and McKernan are also outside the 6,000 foot radius these blocks generally have higher percentages of University population because of the more direct access to the campus.

The situation is somewhat different for the areas west and southwest of the campus (Windsor Park and Belgravia) where block percentages adjacent to the campus are much lower than those to the east and south. This is partially due to the fact that these areas have zoning regulations

which discourage the conversion of houses for student accommodations. As a result only a small number of out-of-town students find accommodations there. In contrast to the Queen Alexandra district, however, these districts are more closely associated with the University, mainly as a residential area for faculty members.

The percentage ratio of University population to total block population is, therefore, more meaningful to those parts of the campus fringe having student accommodations. A housing ratio map comparing the number of houses with University people to total houses by block may be usefully combined with the population ratio to give a better overall picture of the University influence on the campus fringe. This housing ratio is discussed in Chapter IV.

HISTORICAL DEVELOPMENT OF THE CAMPUS AND CAMPUS FRINGE

The early development of Edmonton was greatly influenced by the North Saskatchewan River. The river acted as a barrier to early settlement and resulted in the growth of two separate towns: Edmonton on the north side and Strathcona on the south side. It was not until 1912 that Strathcona amalgamated with Edmonton. The University of Alberta campus site was situated west of the town of Strathcona and up to 1910 most of the existing houses in the campus fringe were located in the districts of Strathcona and Queen Alexandra, which were adjacent to the town's business centre at 82 Avenue and 104 Street.

Although the University was established in 1908 it was not until 1911 that the first building on campus was completed.[4] During the 1910-

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[4]Dr. John Macdonald, The History of the University of Alberta 1908-1958, W.J. Gage Ltd., Toronto, 1958.

1919 period a major building program was undertaken and three residences (Athabasca, Assiniboia and Pembina Halls), St. Stephen's College, the Arts Building, and the North and South Labs were constructed.[5]

One particular factor which has influenced the planning of the campus was the University's early encouragement to have the Strathcona Hospital built on campus. The officials of Strathcona favoured such a site after "the University agreed to provide 'all that piece of property between 84th and 87th Avenues, and 112th and 114th Streets' as a hospital site...."[6] The hospital was completed in 1914 and it formed the nucleus for the major complex which exists today. It is worthwhile noting that these early campus buildings tended to be situated closer to the eastern side of the campus and this had an important bearing on the areas most directly influenced by the University.

The University had its earliest impact on Garneau, the only district in the campus fringe which experienced a large scale housing development during the 1910-1919 decade. The most built-up portion was along 88 Avenue, which was the first paved street in the district. The housing was mainly concentrated in the blocks between 110 and 112 Streets with the density decreasing southward toward 82 Avenue. Generally the houses were substantial two or two and one half storey wood frame structures with the exception of some large brick mansions such as the late Dr. Rutherford's house on Saskatchewan Drive. Little construction took place in the other districts of the fringe. With the completion of the High Level Bridge

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[5]For chronological listing of completed campus buildings see Appendix A.

[6]University of Alberta Hospital, Edmonton, Alberta, Thirty-Fifth Annual Report, 1958, p. 4.

across the North Saskatchewan River in 1913 better transportation connections were possible with the north side. This particularly benefitted Garneau.

Garneau early became one of the better residential neighbourhoods in Edmonton and many of the leading citizens including the first Premier of Alberta, Dr. A.C. Rutherford, resided there. The district also attracted many professors who wished to be close to the University. Proximity to the University, closeness to open land to the west, the pleasant treed streets, and the scenic view of the river valley were some of the factors contributing to the rise of Garneau as one of the select districts in Edmonton.

Although Garneau continued to grow rapidly during the next ten years the physical growth of the University was much slower. During this period only the Medical Building and St. Joseph's College were completed. In 1922 the Strathcona Hospital became the University of Alberta Hospital when the University took over the operations of that institution. Additions were made to the hospital in 1923 and 1929. Photo 1 shows an air view of the campus as it existed in 1929. It shows the beginnings of the academic and hospital complexes and the concentration of residential development on the east side of the campus.

Housing construction continued to be centred in Garneau and by the end of 1929 80% of North Garneau and 60% of South Garneau were built up. A southward extension had reached 80 Avenue. In Strathcona and Queen Alexandra housing construction was much slower and more widely scattered. Much of the land south and east of the campus was vacant or was being farmed as Photos 1 and 2 show.

During the 1930s campus construction was curtailed because of a lack of funds. However, residential housing continued to be built in the campus fringe but at a slower pace. Most of the remaining lots in Garneau

University Campus, 1929

University Campus, 1932.

were built on, as well as most of the blocks north of 80 Avenue between 109 and 112 Streets. Only scattered development occurred in the other districts.

Housing construction in the campus fringe quickened during the 1940s especially after the end of World War II and the discovery of oil in 1947. During this period most of McKernan, Strathcona and Queen Alexandra were built up and residential development south of the campus was extending westward to 115 Street and in the blocks adjacent to 75 and 76 Avenues to 118 Street. The remaining areas of Belgravia and Windsor Park were still largely vacant with parts still being cultivated.

Little construction occurred on campus between 1940 and 1949. The only additions were the cafeteria and two new wings on the Medical Building. However, several significant things did occur which had an important influence on the campus fringe. In 1942 the Royal Canadian Air Force took over the three University residences for training purposes. As a result many students were displaced and had to seek new accommodations. The natural tendency was to look for accommodation as close to the University as possible. Many Garneau residents started to respond to this demand by renting rooms. Prior to this time only a relatively small number of residents offered rooms to students. This new development was accentuated during the years from 1945 to 1948 when a large number of war veterans returned to University.[7] There was a marked shortage of rooms and many citizens of Edmonton responded to the urgent pleas from the University by making some 1400 rooms available to students. This demand for rooms was perhaps the main factor which stimulated the development of rooming

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[7]The University enrolment almost tripled from 1597 in 1945 to 4554 in the peak year of 1948.

accommodations in the campus fringe. At this time the largest concentration of students was in the blocks between 109 and 112 Streets north of University Avenue while the remaining students were widely distributed in Strathcona and Queen Alexandra.[8]

The discovery of oil in 1947 resulted in a marked increase in the availability of capital for construction and this economic stimulus was particularly evident in the 1950s. The University took this opportunity to start a long delayed building program to correct the inadequate physical plant. Accompanying the growing economic prosperity of the Province was a sharp increase in population. Immigration accounted for most of the net increase in Edmonton's population up to about 1958 and thereafter natural increase has maintained the steady population growth. This growth was reflected in a rising student enrolment at the University from 1952 onwards.

The University building program has been accelerated since 1957 in an effort to keep pace with the growing demand.[9] Campus land is being consumed rapidly and most of the remaining open space has been designated for future buildings. An indication of this land pressure is the increased vertical dimension being used for the newer buildings such as the Education Building and the two new residences. A more intensive utilization of the remaining available land is characteristic of the present phase of construction. The shortage of land on campus has forced the University to

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[8] 1947-48 student population plotted using the Student Telephone Directory.

[9] This major building "boom" since 1957 is indicated by the completion dates of buildings listed in Appendix A.

consider outward expansion. North Garneau, which has experienced the greatest impact from the University, was designated as the area for future expansion and since 1962 the University has allocated monies for the purchase of available houses in the district.

By the end of 1959 most of the campus fringe had been completely built-up. Most of the construction during the 1950s took place in Windsor Park and Belgravia, both of which were planned neighbourhood units. These two districts are characterized by single family residential uses and the lot sizes are much larger than the older districts in the fringe.

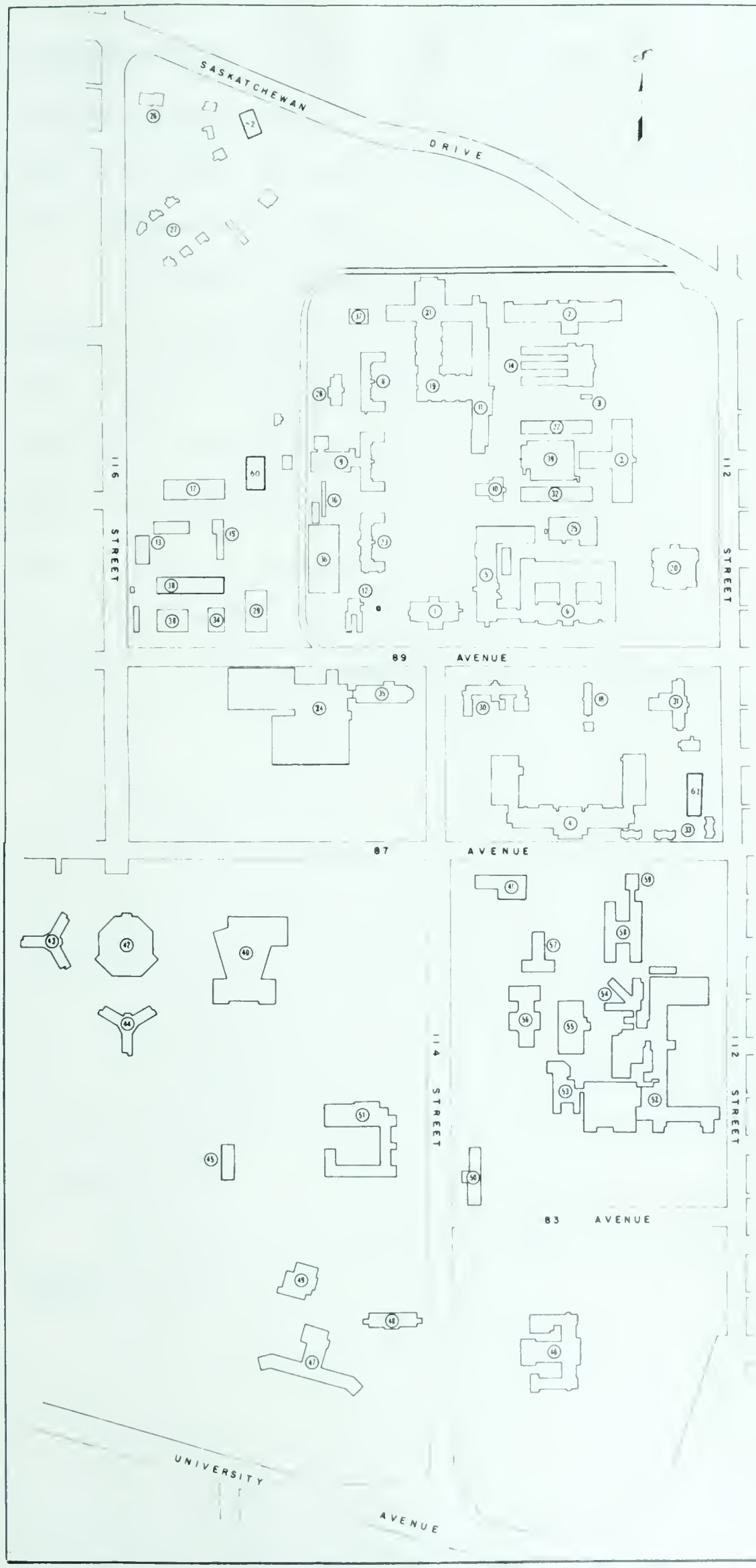
Briefly summarizing the growth of the campus fringe, most of the pre-1910 housing was located in Strathcona and Queen Alexandra. Growth tended to be gradual in both these districts with no large scale development in any one ten year period. On the other hand Garneau experienced rapid growth between 1910 and 1929 and by the end of 1939 almost the whole district was built-up. A gradual southward extension of housing occurred from Garneau into McKernan and by 1949 most of this district was built-up. Residential construction gradually took place south of the campus in Belgravia but it was not until the 1950s that Belgravia and Windsor Park were completely developed.

CAMPUS MORPHOLOGY

A brief description of the campus morphology is useful here since it has a bearing on the impact of the University. Figure 4 shows the distribution of buildings with the date of construction of most of the important ones listed in Appendix A. The major academic building complex is situated on the east half of the campus north of 89 Avenue with the exception of the new Education Building. Housing accommodation is in

FIGURE 4

CAMPUS MORPHOLOGY
UNIVERSITY of ALBERTA



EXISTING BUILDINGS

1 ADMINISTRATION BUILDING
2 ARTS BUILDING
3 ARTS BUILDING ANNEX
4 EDUCATION BUILDING NORTH
5 ENGINEERING BUILDING
6 MEDICAL SCIENCE BUILDING
7 AGRICULTURAL & BIOLOGICAL SCIENCES BUILDING
8 ASSINIBOIA HALL (MEN'S RESIDENCE)
9 ATHABASCA HALL
10 CAFETERIA
11 CHEMISTRY BUILDING
12 DOMINION AB OF PLANT PATHOLOGY
13 GARAGES
14 GREENHOUSES
15 GROUNDS DEPT MAINTENANCE SHOP
16 GROUNDS DEPT GREENHOUSE
17 HYDRAULICS
18 OLD INFIRMARY
19 LECTURE BUILDING
20 RUTHERFORD LIBRARY
21 MATHEMATICS
22 NORTH LAB BUILDING
23 PEMBINA HALL (WOMENS RESIDENCE)
24 PHYSICAL EDUCATION
25 POWER PLANT (NORTH)
26 RESIDENCE (PRESIDENT)
27 RESIDENCE (STAFF)
28 SOCIOLOGY DEPARTMENT
29 ARMED SERVICES BUILDING
30 ST JOSEPHS COLLEGE
31 ST STEPHENS COLLEGE
32 SOUTH LAB BUILDING
33 STAFF APARTMENTS
34 SUPERINTENDENT OF BUILDINGS
35 STUDENTS UNION BUILDING
36 TENNIS COURT STUDENT
37 VAN DER GRAAF BUILDING
38 WORKS DEPARTMENT
39 GRADUATE STUDIES LIBRARY

NEW BUILDINGS

60. STRUCTURAL ENGINEERING
61. HOUSEHOLD ECONOMICS
62. FACULTY CLUB

LEGEND

40 PROVINCIAL AUDITORIUM
41 RESEARCH COUNCIL OF ALBERTA
42 FOOD SERVICES BUILDING
43 WOMEN'S RESIDENCE
44 MEN'S RESIDENCE
45 POWER PLANT (SOUTH)
46 EDUCATION BUILDING
47 ABERNART SANATORIUM
48 NURSES' HOME (SANATORIUM)
49 SERVICE BUILDING (SANATORIUM)
50 INTERNES' RESIDENCE
51 NURSES' HOME
52 UNIVERSITY HOSPITAL, MAIN BUILDING
53 CANCER CLINIC
54 WELLS PAVILION
55 LAUNDRY & MORGUE
56 PROVINCIAL LAB OF PUBLIC HEALTH
57 HEALTH SERVICES BUILDING
58 COLONEL MEWBURN PAVILION
59 OPHTHALMOLOGY & OTO-LARYNGOLOGY

SOURCE: GENERAL PLAN, CITY OF EDMONTON

greatest demand in Garneau which is adjacent to this complex. The hospital complex occupies most of the land south of 87 Avenue to 83 Avenue and it also is concentrated on the east side of the campus. Much of this complex was completed after 1950.

On-campus residences with the exception of St. Stephen's and St. Joseph's Colleges tend to be situated west of the two major complexes. The on-campus residences include the three old residences of Pembina, Assiniboia and Athabasca Halls, and the two new residences just completed, which are located west of the Jubilee Auditorium. Also situated on the west side of the campus north of 89 Avenue is the concentration of service buildings. In the large block between 114 and 116 Streets and 87 to 89 Avenues is located the Students' Union Building, the Physical Education Building and the major playing fields. The only other large building is the Jubilee Auditorium. A part of its large parking area is used for daytime student parking. In the southern part of the campus, physically isolated from the main academic complex, is the old Education Building. Although no specific information is available it seems likely that many Faculty of Education students sought accommodations as close to this building as possible when it was being used. Originally this was probably an important factor in the development of the area south of the campus as a rooming area.

The frontispiece shows the campus as it exists today, a marked change since 1932.

CHAPTER III

GENERAL POPULATION CHARACTERISTICS

A knowledge of the population characteristics of the residential districts in the campus fringe, as well as the spatial distribution of the University population, contributes to a better understanding of the effect the University has had on the fringe. This is especially true when this knowledge is related to the land use patterns discussed in Chapters IV and V.

The 1963 population in the campus fringe was 20,999. Although Belgravia and Queen Alexandra had the largest populations, North Garneau had the highest net residential density of 42.7 persons per acre (see Table 1A). Since the time when the fringe was almost completely developed (1955) the population has tended to decrease. During the five year period 1956-61 the population dropped by almost 900 with Strathcona experiencing the sharpest decrease. This trend has continued since then, and it is primarily due to the aging of the older districts such as Garneau, Strathcona and Queen Alexandra. Even in the newer districts only Belgravia showed an increase and this was negligible. In sharp contrast, the City of Edmonton has had a steady population increase since 1947 when the discovery of oil stimulated a period of rapid expansion and development (see Table 1B).

Many of the population characteristics of the campus fringe, such as age, sex ratio and marital status, also reflect sharp differences from those of the City (see Tables 1B and 1C). One of the factors contributing to these differences has been the presence of the University population in the campus fringe.

POPULATION

TABLE 1A

Districts	Population[1] 1963	Residential Acreage (in acres)	Net Residential Density (persons per acre)
North Garneau	1450	33.9	42.7
South Garneau	1589	44.9	35.4
McKernan	4018	136.4	29.5
Belgravia	4207	151.6	27.8
Windsor Park	2923	107.5	27.2
Strathcona	2704	68.4	39.5
Queen Alexandra	4108	120.5	34.1
Campus Fringe	20,999	663.2	30.3

[1]Source: 1963, City of Edmonton Civic Census

TABLE 1B

Census Tracts	Population 1956	Population 1961	Percentage Age Breakdown Age: 0-14	15-24	25-54	55 & over
22	5340	5204	22.4	22.4	35.7	19.4
23	3460	3007	19.5	17.1	36.9	26.3
28	3955	3988	33.4	14.5	40.3	11.9
29	7833	7613	29.9	16.8	39.5	13.6
30	4563	4410	25.8	17.7	37.4	18.9
Total	25,151	24,222	26.8	18.3	38.2	17.1
City	227,381	281,027	32.9	14.8	39.8	12.5

TABLE 1C

Census Tract	Sex Ratio[1]	Per cent of Single persons	% of U. of A. Pop. in Census Tract to total Pop.	Persons Per Household	% Households with lodgers to total no. of households
22	122.6	53.1	6.6	3.3	12.1
23	107.7	44.2	4.0	2.7	8.9
28	107.4	49.5	4.9	3.8	8.0
29	108.1	48.0	3.8	3.7	14.5
30	102.6	46.1	2.8	3.4	17.6
Total	109.8	48.5	4.4	3.4	12.8
City	99.4	47.6	1.2	3.6	9.3

[1]Number of females to every 100 males

Source: Statistics in Tables 1B and 1C based on Census of Canada 1961

Seven population pyramids have been constructed to show the differences in population composition which exist between the city, the campus fringe and the districts in the fringe (see Figures 5 and 6).

Edmonton, as has already been pointed out, has undergone a rapid population expansion since the late 1940s. Up to 1958 this expansion was primarily due to a net in-migration but since then the continued growth has been due mainly to natural increase.[1] Four major points stand out in connection with the city's population structure (Figure 5). First, there is a sharp protuberance in the 25 to 54 year age range which reflects the large in-migration of people in those ages. Second, there is a sharp indentation centred on the 15 to 19 year age group which results from the economic depression and the war years. The third feature is a broad base in the younger age groups which is indicative of a growing population and is the result of the post-war baby boom. Fourth, the balanced distribution of males and females in each of the five year age groups within the city structure is noteworthy.

A comparison of the population pyramids in Figure 5 indicates a number of differences which exist between the city and campus fringe populations. The fringe lacks the broad base of the younger age groups and it is characterized by an almost uniform population distribution for each of the five year age groups up to 24. The absence of an indentation in the 15 to 24 year age range can be attributed primarily to the numbers of University students in the campus fringe. Another difference is the generally higher ratio of females to males. In the fringe the sex ratio

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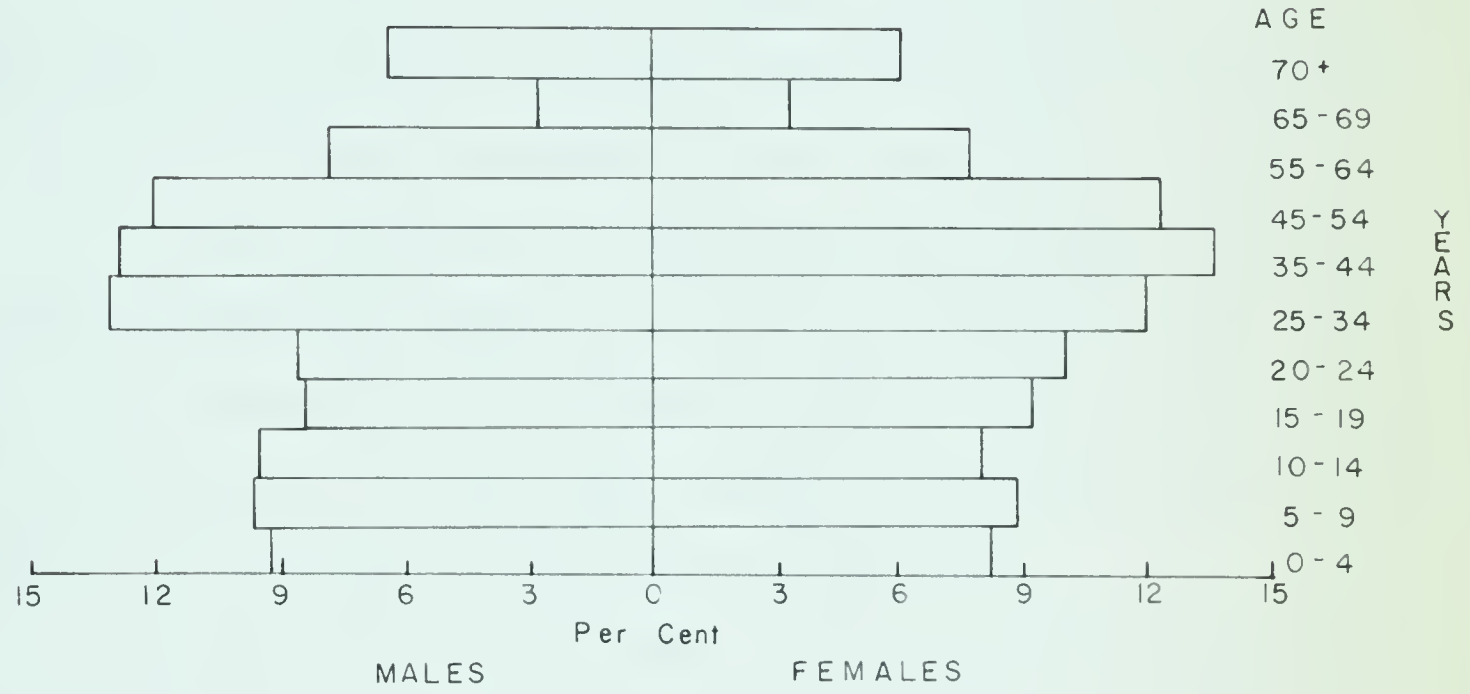
[1]Draft General Plan Population Chapter III.

FIGURE 5

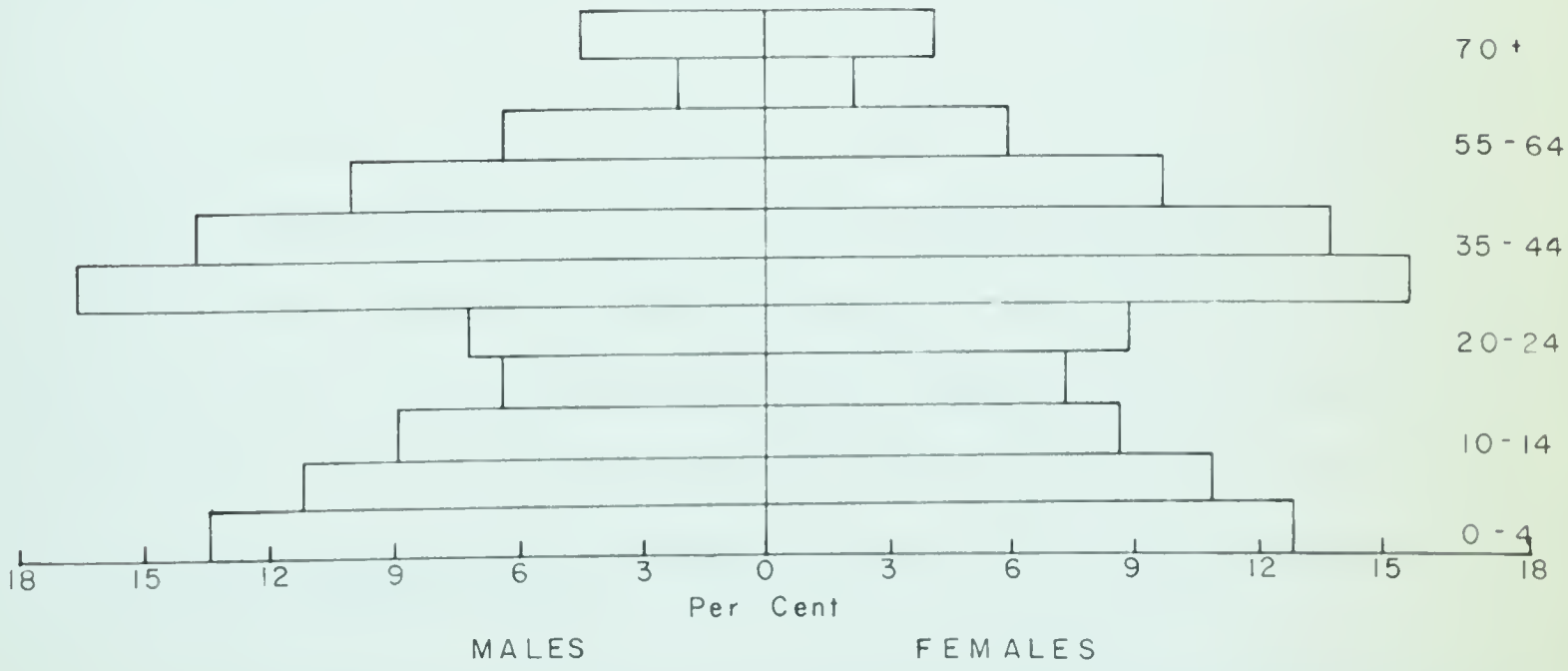
POPULATION PYRAMIDS

1961

CAMPUS FRINGE



EDMONTON



Source: Census of Canada
Bulletin CT-21.

is 109.8 compared to 99.4 for the city.[2] This difference was noticeable in the 15 to 19, 20 to 24, 35 to 44 and 45 to 54 year groups. The large number of females in the first two groups would be due mostly to the presence of University students, nurses in residence, and female staff employed at the University and the Hospital. The percentage of the campus fringe population in the 15 to 24 year range was 3.5% higher than that for the city which reflects the presence of the University population.

The campus fringe also is characterized by an older population structure as indicated primarily by the 0 to 14, and 55 and over age groups (Table 1C). Expressed as percentages for each of these groups the fringe had 26.8% in the 0 to 14 year range compared to the city's 32.9%, and 17.1% compared to only 12.5% for the 55 and over age group.

Marital status is another population characteristic which has been influenced by the presence of University students. Although the difference between the city and campus fringe is small there is a significant variation in Garneau-Windsor Park area where single persons represented 53.1% of the population compared to only 47.6% for the city.

The number of persons per household in the fringe is slightly lower than that of the city - 3.4 compared to 3.6.[3] Only in the districts of Belgravia and McKernan where most of the families are young and still growing are the numbers per household greater than the city average. On the other hand, the older districts where families are decreasing in size

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[2]Sex ratio is the demographic term for the ratio of number of females to every one hundred males.

[3]"A household consists of a person or group of persons occupying one dwelling." A dwelling according to the census is a "structurally separate set of living quarters, with a private entrance either from outside the building or from a common hall inside." Census definitions of terms, 1961, D.B.S.

the average is less than 3.6 with Strathcona having a low of 2.7 persons per household. The lower figures for the older districts are also partially due to the greater number of roomers (many of whom are University students) who reside there.

The census figures for the number of households with lodgers bring out this point more clearly (see Table 1C). The campus fringe had 12.8% of its households in this category compared to only 9.3% for Edmonton. Only the older districts which are included in census tracts 22, 29 and 30 had higher percentages than the city. In Garneau and McKernan most of the lodgers would be University people while many of those in Queen Alexandra would not be connected with the University since this district was farther removed from the campus.

The 1961 Census of Canada also tabulated the number of students attending University. Although the enumeration was taken in July, thus missing many of the out-of-town students, the general distribution pattern is still meaningful. Of the Edmonton population only 1.2% attend University while for the campus fringe the percentage was almost four times as great, at 4.4%. Within the fringe there was a marked variation with the Garneau-Windsor Park district having a high of 6.6% followed by Belgravia, Strathcona, McKernan and Queen Alexandra with 4.9, 4.0, 3.8 and 2.8% respectively. These percentages help to indicate the varying degrees of influence the University has had on the distribution of students within the fringe.

POPULATION DIFFERENCES WITHIN THE CAMPUS FRINGE

A more detailed analysis of the population by census tracts composing the campus fringe reveals that a number of features of the population

structure have been influenced by the presence of the University. The population pyramids presented in Figure 6 bring out meaningful differences which exist between the various parts of the fringe.

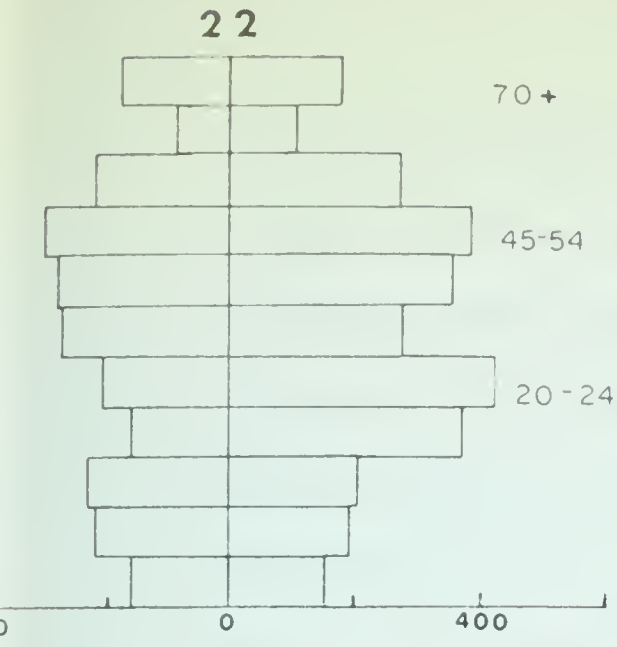
Census tract 22 (Garneau-Windsor Park) has been most influenced by the presence of the University as is reflected in its population structure. This influence would have been even more apparent if Garneau and Windsor Park had not been combined since they are very dissimilar.

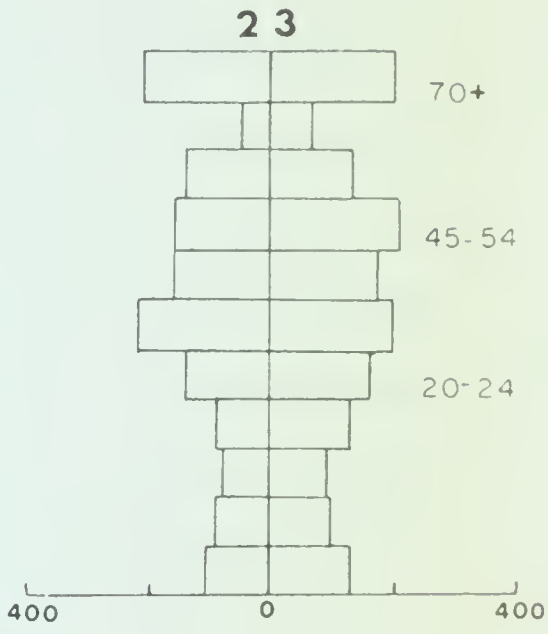
A number of interesting points concerning census tract 22 are relevant to this study. As indicated in the historical development most of Garneau was built-up by 1929. In many cases the families have grown up and the children have left the district. As a result many of the families are either contracting in size or have only the parents remaining. This has produced a pyramid exhibiting characteristics of an aging population with a smaller percentage in the younger age groups and a higher percentage in the older age groups. Only 22.4% of the population was under 15 compared to the city average of 32.9% while 19.4% were over 55 compared to the city's 12.5%.

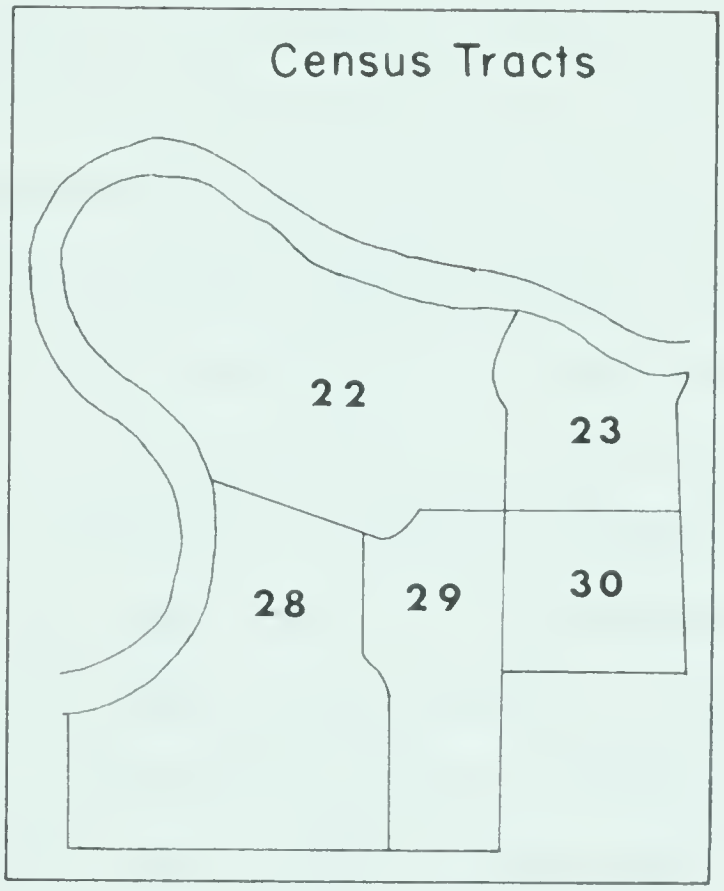
The desire to continue residence in Garneau after the families have grown up was indicated by the fact that almost 30% of the respondents to Questionnaire "A" had lived here more than 26 years. The attractive surroundings, the proximity to the Hospital, the activities of the University, the relative closeness to the downtown area and the possibility of supplementing income by renting rooms to students are some of the main reasons contributing to the high proportion of older people in the district. Some of the long-time residents are now widowed. By renting rooms to students, many of them are able to maintain useful, active lives and this satisfaction may even outweigh the benefits of financial return.

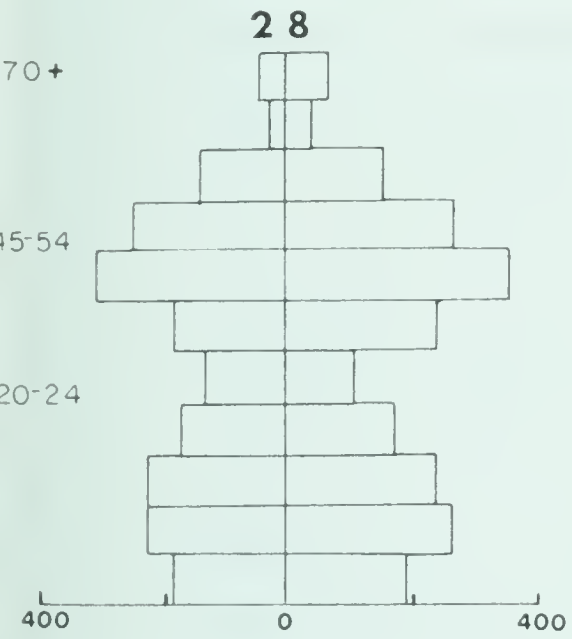
FIGURE 6

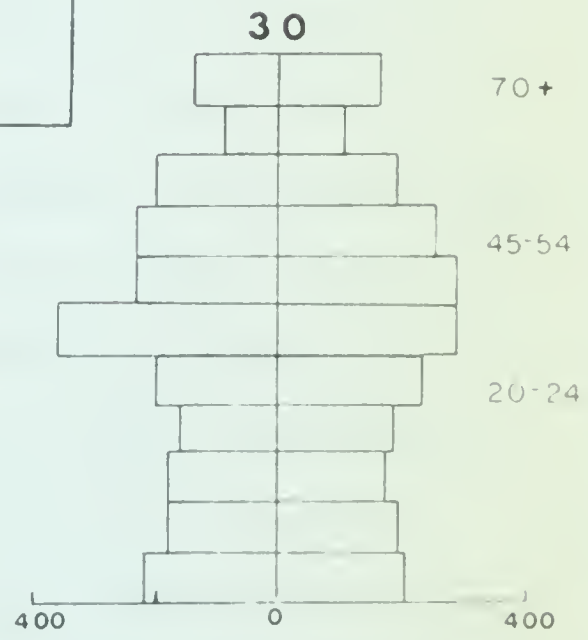
POPULATION PYRAMIDS by CENSUS TRACTS 1961

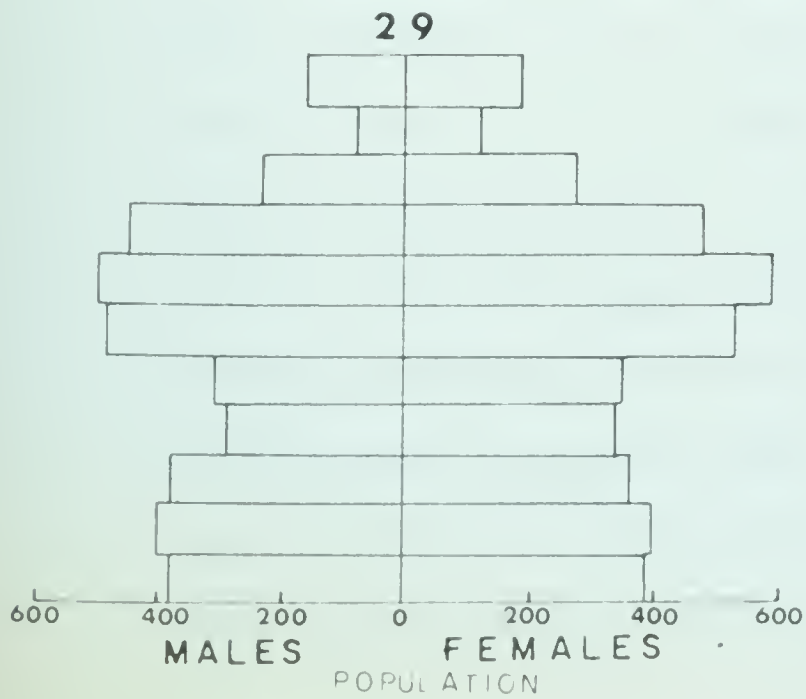












AGE
70+
65-69
55-64
45-54
35-44
25-34
20-24
15-19
10-14
5-9
0 4

Source Census of Canada
Bulletin CT-21

Furthermore, many of the older Garneau houses are of two or two and a half storeys, and when the family has grown up and left it is possible to convert the spare rooms into living accommodations. If the elderly couple moves out, often some University-related use such as a fraternity may take over the house or people may purchase the house with the purpose of converting it and renting rooms. The pleasant treed, informal nature of the district, as well as its close proximity to the University, has appealed not only to many older people but also to faculty and staff members as well. The fortunate coincidence of an aging population with the availability of space and the demand for accommodation have been important forces occasioning the transition of Garneau into a major rooming-house area in the campus fringe.

In addition to the characteristics already mentioned the district population structure has been influenced by the presence of the University students. This is indicated by the high percentage of the population in the 15 to 24 year age range. This was 22.4% compared to 14.8% for the city and 18.3% for the campus fringe generally. The marital status has also been affected as 53% of the residents in Garneau were single, compared to 47.6% for the city and 48.5% for the campus fringe.

Another major difference which exists in census tract 22 is the high ratio of females to males (122.6). This is in sharp contrast to both the campus fringe and the city which had 109.8 and 99.4 respectively. For the five year age groups 15 to 19, and 20 to 24, the ratio was almost two to one. Since the Canada Census was taken in July it was decided to analyze the Edmonton Civic Census to see whether this difference in ratio was noticeable during the winter session. Unfortunately, the age breakdown was limited to two categories, under and over age 21. The greatest differences in the sex ratio occurred in polling division 94 which includes

the University campus and Windsor Park. This would suggest that the nurses' residence would be the major factor producing this difference. In the 1963 Civic Census the female population was higher by about 450. Approximately 300 of this difference was accounted for in polling division 94 and the remainder in Garneau. These statistics suggest that females prefer closer accommodation to the University than do males. This suggestion takes on more validity when it is noted that the university male population outnumbers the females by almost two to one and that 10 of the 14 fraternities in Garneau are male. In addition to the University students many nurses and female University employees live in Garneau because of the convenient proximity to work. They would contribute also to the higher female ratio. Another possible reason may be that more male students have cars and they are, therefore, more mobile and are able to travel greater distances.

Census tracts 28 (Belgravia) and 29 (McKernan-Parkallen) are newer districts and this is reflected in the population structures which are similar to that of the city although the 0 to 4 year age group is smaller. Only Belgravia and McKernan in the campus fringe had a higher number of persons per household than the city average of 3.6. These were 3.8 and 3.7 respectively. Unlike census tract 22 the University population did not markedly alter the population pyramid although the sharp indentation in the 20 to 24 year age group was greatly modified in the case of McKernan. The sex ratio for both tracts was higher than for the city but was much lower than for Garneau and Windsor Park.

The two remaining districts in the fringe, Strathcona and Queen Alexandra, are covered by census tracts 23 and 30 respectively. Both districts are of a similar age and it is therefore not a surprise to find that their population structures are also similar. The dominant

features of these structures are the small percentage in the 0 to 14 year range and the high percentage in the 55 and over age group. Both these features are characteristic of an aging population. The percentage of the population in the 15 to 24 year age group was somewhat higher than that for the city,and this could be attributed partially to the presence of University students. It seems that the University population has had a somewhat greater effect on the district population of Strathcona than it did on Queen Alexandra. This is understandable since Strathcona, in addition to being closer to the campus, also has a larger proportion of University students.

THE UNIVERSITY POPULATION IN THE CAMPUS FRINGE

The total University population in the city in 1962-63 was 9409, of which the non-permanent students accounted for 43.7% while permanent students, faculty, and staff had 34.5%, 6.9% and 14.9% respectively (see Table 3).[4] In contrast to the city distribution almost two-thirds of the campus fringe population consisted of out-of-town students while city students, faculty and staff accounted for 16.9%, 10.4% and 6.8% respectively. This difference in population composition between the city and the campus fringe is graphically illustrated in Figure 7 which also presents the population breakdown for each of the seven districts in the fringe. Tables 2, 3 and 4 give the detailed statistics on the University population. In the following discussion the term population, unless otherwise specified, refers to the University population.

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[4]The term "non-permanent" refers to out-of-town students residing in the City only during the University term, and the term "permanent" refers to those students whose homes are in Edmonton.

TABLE 2

UNIVERSITY POPULATION 1962-63

	Student non-perm.	Student perm.	Faculty	Staff	Total
City Population[3]	4115	3241	653	1400	9409
% of Total City Pop.	43.7	34.5	6.9	14.9	100.0
Campus Fringe Population	2260	579	356	234	3429
% of C.F.[1] Total Pop.	65.9	16.9	10.4	6.8	100.0
% of C.F. Pop. to Total City Pop.	24.0	6.2	3.7	2.5	36.4
% in C.F. to City Total for each Category	54.9[2] {UG[1] 53.8 {G[1] 67.4	17.9 {UG 17.4 {G 22.1	54.5	16.7	-

[1]C.F. - Campus Fringe; UG - Undergraduate G - Graduate

[2]There is an additional 26.4% on campus.

[3]The term population refers only to the University population.

TABLE 3

PERCENTAGE BREAKDOWN OF THE UNIVERSITY POPULATION IN THE CAMPUS FRINGE BY DISTRICT

	Student non-perm.	Student perm.	Faculty	Staff
City Total	43.7	34.5	6.9	14.9
Campus Fringe	65.9	16.9	10.4	6.8
North Garneau	81.9	6.4	6.4	5.3
South Garneau	78.5	8.8	7.2	5.6
Belgravia	46.6	24.9	20.8	7.7
McKernan	70.3	15.2	7.1	7.4
Strathcona	67.1	19.2	5.7	8.0
Windsor Park	29.0	39.4	29.5	2.1
Queen Alexandra	64.7	20.3	3.8	11.2

TABLE 4

UNIVERSITY POPULATION DISTRIBUTION BY DISTRICT 1962-63

	Under-grad non-perm.	Under-grad perm.	Grad non-perm.	Grad perm.	Faculty	Staff	Total	% of Univ. Pop. to Total District Pop.
City Total	3790	2951	325	290	653	1400	9409	3.1
North Garneau	449	39	79	3	41	34	645	44.5
South Garneau	368	39	40	7	37	29	520	32.7
McKernan	475	94	41	17	52	54	734	18.3
Belgravia	252	122	20	23	121	45	583	13.8
Strathcona	242	66	17	8	22	31	386	14.3
Windsor Park	64	93	6	2	71	5	241	8.2
Queen Alexandra	191	62	16	3	12	36	320	7.8
Campus Fringe	2041	515	219	64	356	234	3429	16.3

The differences existing between the city and campus fringe populations become apparent by determining what percentage of the total population by category actually resides in the fringe. This reveals that 54.9% of the non-permanent students and 54.5% of the faculty lived in the fringe while the permanent student and staff percentages were both below 20%. Differentiating the non-permanent students into graduates and undergraduates, the percentages were 67.4% and 53.8% respectively. These percentages indicate that the distribution of non-permanent students and faculty are influenced more by the location of the University than are the permanent students and staff. In addition to the 54.9% of the out-of-town students living in the fringe there is an additional 26% living in University residences on campus. This means that over 81% of the total number of out-of-town students live within the boundaries of the campus fringe.[5]

Just as there are significant differences existing between the campus fringe and the city, even so within the fringe there appears to be a selective process present which results in a variable distribution of the six categories which comprise the University population.[6]

North Garneau is characterized by a predominance of non-permanent students which accounts for almost 82% of the total population while the other categories evenly share the remaining 18% (see Table 3 and Figure 7). A similar distribution is present in South Garneau but not quite to the same degree. McKernan has a percentage breakdown resembling that of the

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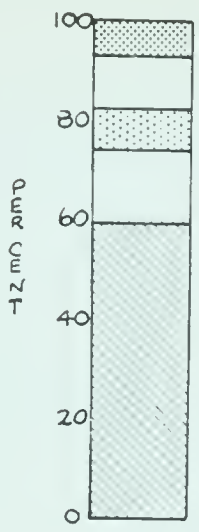
[5]The residences include Athabasca (147), Assiniboia (173), Pembina (158), Pembina House (17), St. Joseph's College (98), St. Stephen's College (148) and Nurses' Residence (344) for a total of 1,085.

[6]The six categories are: undergraduate non-permanent; undergraduate permanent; graduate non-permanent; graduate permanent; faculty; and staff.

FIGURE 7

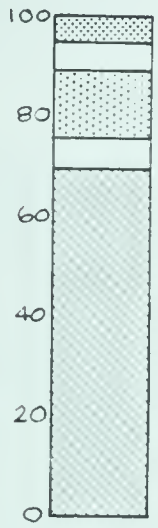
PERCENTAGE DISTRIBUTION of the UNIVERSITY POPULATION

EDMONTON

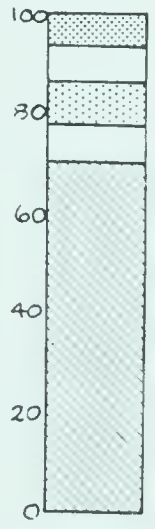


CAMPUS FRINGE

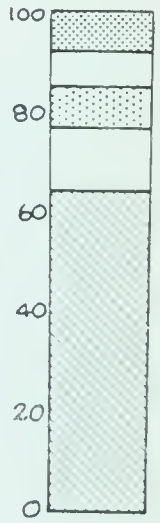
STAFF
FACULTY
GRAD PERMANENT & NON-PERMANENT
UNDERGRAD. PERMANENT
UNDERGRAD. NON-PERMANENT



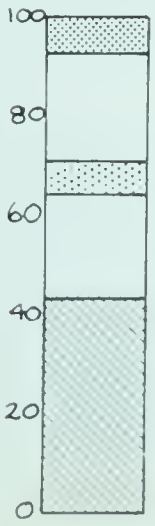
NORTH GARNEAU



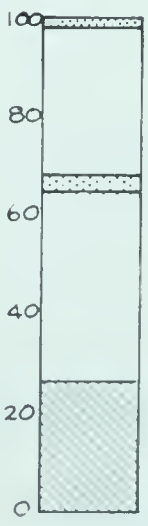
SOUTH GARNEAU



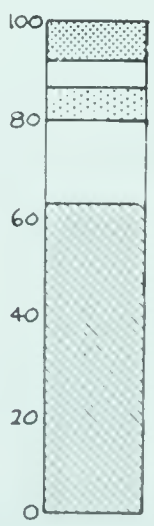
McKERNON



BELGRAVIA



WINDSOR PARK



STRATHCONA

QUEEN ALEXANDRA

campus fringe while Strathcona varies only slightly from this same distribution. The permanent students, faculty and staff comprise only 30% or less of the University population in these four districts. The population distribution is also similar for Queen Alexandra with the exception of the faculty and staff categories. The faculty percentage of 3.8% was much below that of the campus fringe. The longer distance and the less favourable accessibility to the campus have probably discouraged many faculty members from living here. Another factor which should be mentioned is that Queen Alexandra is an older district and has less expensive housing. In contrast the staff percentage was 11.2% which was the highest of any district. This would suggest that proximity to the University may be of less importance to staff members.

Variations in the composition of the population are greatest in the districts of Belgravia and Windsor Park. In Belgravia only 47% of the population consisted of out-of-town students while there are significantly higher percentages in the permanent student and faculty categories. Windsor Park differs most from the general population composition for the campus fringe. It is the only district in which the non-permanent students do not form the largest group. This category is exceeded by both the permanent students, with 39.4%, and the faculty with 29.5%. The main reason for this difference is that city zoning regulations in part of Belgravia and all of Windsor Park have discouraged the conversion of houses for rental purposes. Both districts have attracted many faculty members because of the availability of good quality housing and because of their close proximity to the University.

DISTRIBUTION PATTERNS OF THE UNIVERSITY POPULATION IN THE CAMPUS FRINGE

Just as there are variations in the composition of the University

population in the different districts, there are also noticeable variations present in the actual distribution patterns. The distributions of each of the six population categories have been mapped and are presented in Figures 8, 9 and 10.

The distribution of the faculty members tends to form a dispersed pattern with the exception of parts of Belgravia, Windsor Park and North Garneau (see Figure 10). The largest concentration occurs in the central part of Belgravia, which is due to the presence of a number of apartment buildings. In Windsor Park the main concentration of faculty members is in the blocks directly adjacent to the University. Other than these two sections and several smaller ones in Garneau, the faculty is dispersed throughout the campus fringe. Generally the density decreases outwards from the edge of the campus, especially in the direction of Strathcona and Queen Alexandra which have only a relatively small number in this category.

The staff distribution is even more widely spaced than that of the faculty as Figure 10 shows. Each district, with the exception of Windsor Park, has roughly the same number of staff members. The lack of any significant concentration of this group, both in numbers and in density, in any part of the fringe indicates that the staff is less affected by the location of the University than is the faculty.

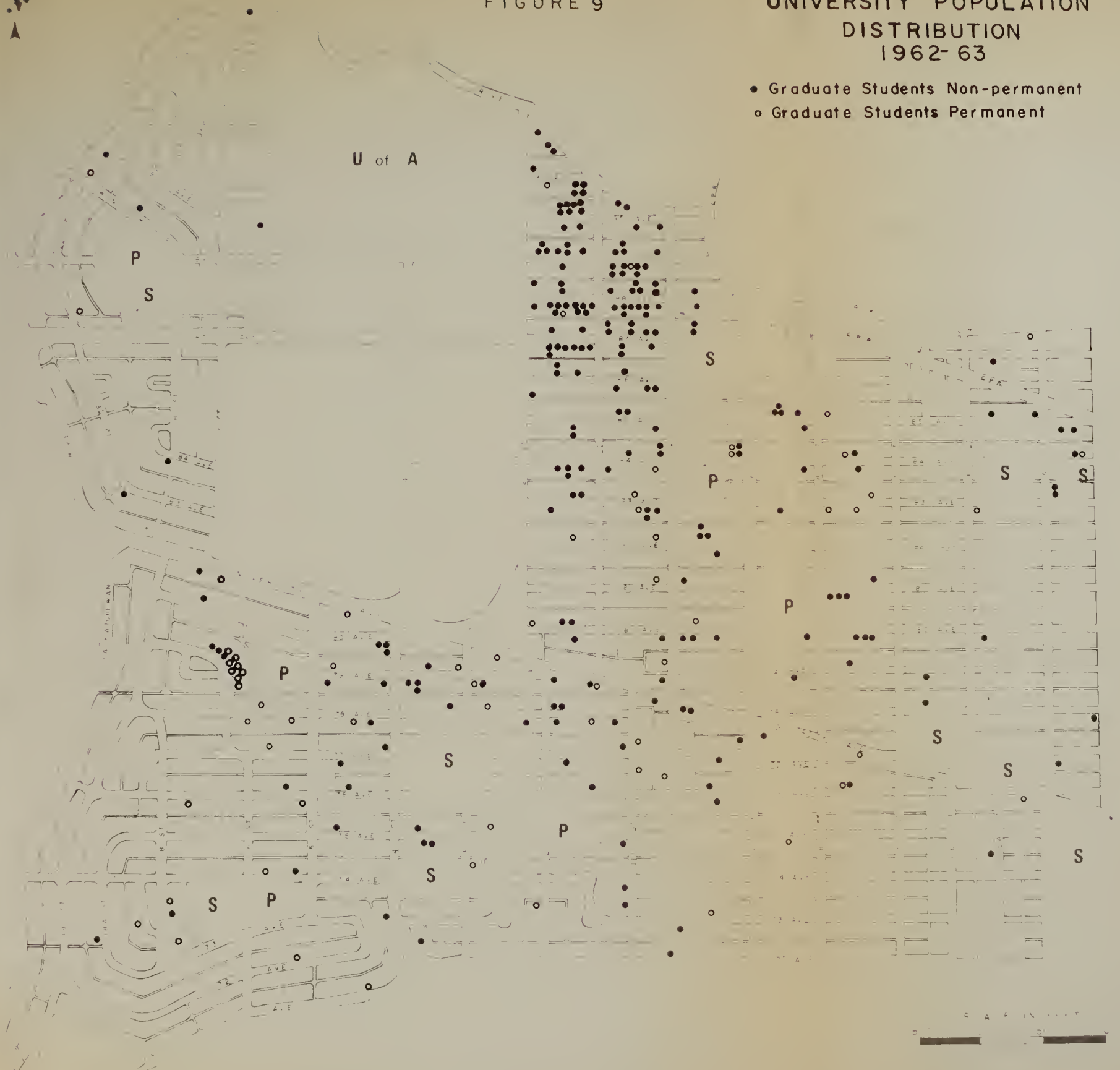
The most noticeable feature regarding the graduate non-permanent student distribution is the large concentration in Garneau, particularly North Garneau (Figure 9). Beyond this district the pattern is a widely dispersed one. Proximity to the University is clearly an important factor in the location of out-of-town students. This segment of the population will become increasingly important if the present rate of growth for the Faculty of Graduate Studies continues. During the past

FIGURE 9

UNIVERSITY POPULATION DISTRIBUTION 1962-63

• Graduate Students Non-permanent

o Graduate Students Permanent



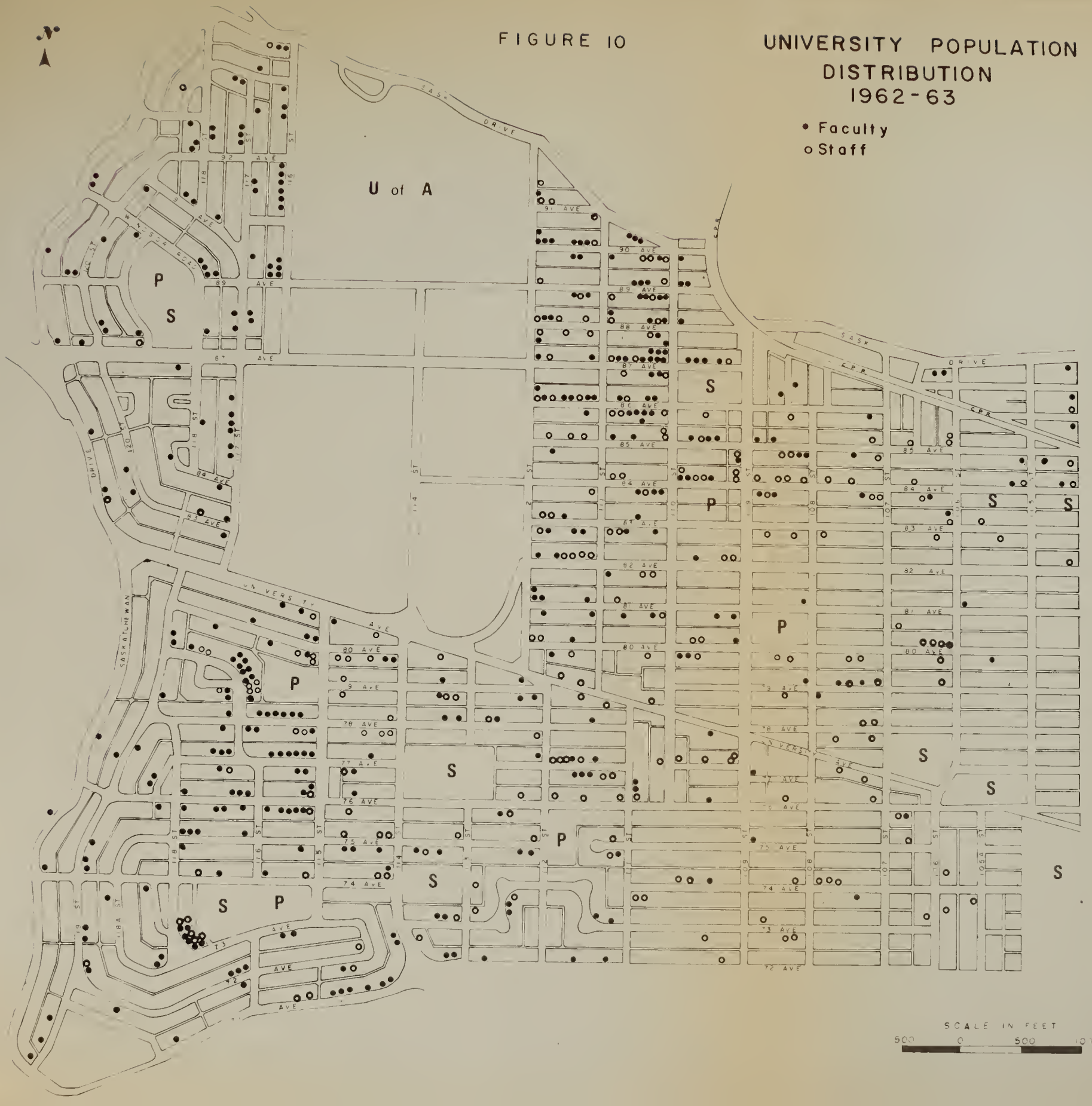


FIGURE 10
UNIVERSITY POPULATION DISTRIBUTION 1962-63
• Faculty
o Staff
U of A
SASK DRIVE
CPR
UNIVERSITY DRIVE
SASKATCHEWAN DRIVE
P
S
SCALE IN FEET
500 0 500

five years the Faculty has increased from 533 to 899. By 1980 it is expected to exceed 3,000.

The graduate permanent students comprise the smallest segment of the University population with only 64 living in the fringe (Figure 9). Most of this group is located in Belgravia and McKernan with the only significant concentration being in an apartment block in Belgravia. In certain cases some of these students are really from outside Edmonton, but since they are attending University for several years they have listed Edmonton as their permanent address. This was often true of foreign students.

The group that has had the greatest impact on the campus fringe in terms of numbers, and distribution, is the non-permanent or out-of-town undergraduate students (Figure 8 in the folder). Compared with the other University population distributions, this one is characterized by a more dense pattern covering much of the campus fringe. To better illustrate the density of concentration and the degree of impact this group has had on the fringe, a percentage ratio of the non-permanent undergraduate population to total population by block was calculated. The results are presented in Figure 11.

A number of points can be made regarding the distribution pattern of out-of-town students. First, the greatest penetration, as reflected by density, has occurred in the older residential districts of Garneau and part of McKernan which are directly adjacent to the campus. There has been little penetration into the newer districts of Belgravia and Windsor Park. Second, the highest densities occur along the east and south sides of the campus for about a two-block depth. Third, the greatest impact has occurred in North Garneau which is directly across

FIGURE 11

NON-PERMANENT STUDENT POPULATION AS A PERCENTAGE OF TOTAL POPULATION BY BLOCK 1962-1963

from the main academic complex. Fourth, the densities decrease outwards with distance from the campus with the exception of slight increases in those blocks next to major traffic arteries, such as 109 Street, 82 Avenue, and 76 Avenue, and in a few other isolated blocks mainly located in Strathcona. The rate of decrease is more uniform towards the south and southeast edges of the campus fringe than it is towards the east. Fifth, despite the additional 2,000 foot distance to the main academic complex, blocks adjacent to the south campus boundary have a density almost comparable to that of North Garneau. From these points it can be concluded that the age of the district, the location of the district in relation to the campus and the distance from the campus are significant factors influencing the distribution of the non-permanent undergraduate population. This in turn influences the degree of impact the population has on the districts in the campus fringe. This impact is indicated by the close correlation that exists between the areas with the highest concentrations of out-of-town students, and the areas with the greatest number of rooming houses, fraternity houses and other off-campus residences. Figures 8, 14 and 19 show this correlation. These uses, which will be discussed in greater detail in a later chapter, are closely related to the most densely populated blocks. Fraternities with about 150 resident students, and other off-campus residences with some 175 students contribute significantly to the high densities in some blocks in Garneau.

In marked contrast to the above distribution pattern is that for the undergraduate permanent students. Although forming the second largest group in the campus fringe it represents only 17.4% of the total city population in that category. There is an even distribution of permanent students throughout the fringe with only a slightly higher density in the districts directly adjacent to the campus.

DISTANCE AND POPULATION DISTRIBUTIONS

The University population distributions when compared in terms of distance from the campus brings out further differences which exist between the six University categories.[7] Figures 12 and 13 show graphically the percentage breakdown within each category by 1,000 foot intervals from the campus.* Two features are brought out by Figure 12. First, the curves for the undergraduate non-permanent, the graduate non-permanent and the faculty are quite similar. Second, the undergraduate permanent, graduate permanent, and staff also exhibit similar curves but they differ from the former group in that the rate of decrease from the campus is much more gradual.

The non-permanent graduate and undergraduate students and the faculty distribution patterns are clearly influenced by the location of the University. These three categories all have a marked concentration of their populations in the first zone followed by a rapid decrease in each succeeding zone. The total population for all three drops from 1264 in the first zone to 704 in the second, and then to 405 in the third zone. Distance, therefore, is a significant factor influencing the location and concentration of the out-of-town students and the faculty in the campus fringe.

The permanent student and staff distribution patterns on the other hand, are not as influenced by the University although they also show a graduate decrease outwards from the campus. This more gradual decrease reflects a more evenly distributed population within the campus fringe.

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[7] See Appendix B for discussion of technique used and problems encountered.

*1000 foot intervals are shown on Figure 8 in folder.

Percentage Distribution for Each
University Population Category
by 1000 Foot Intervals

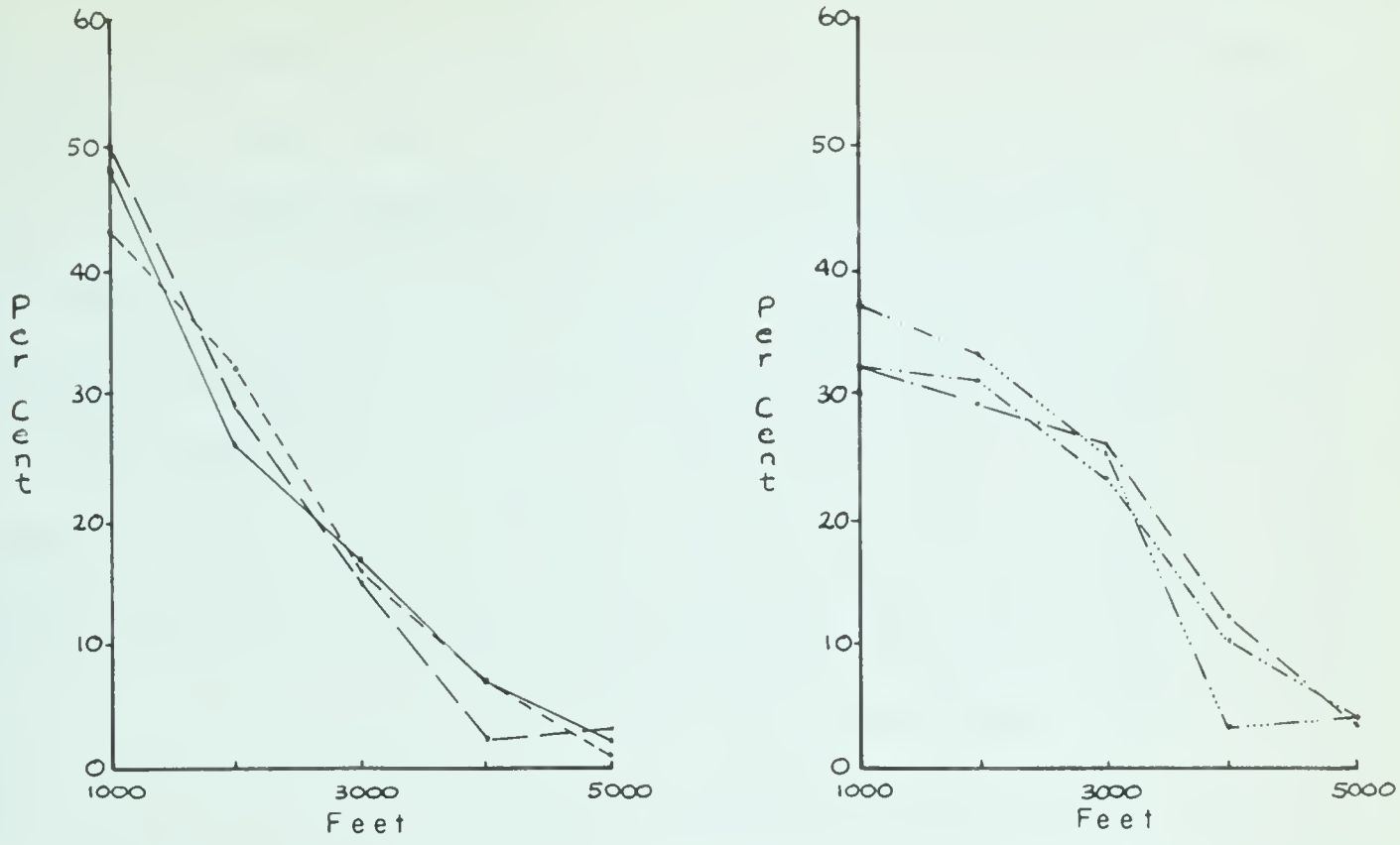


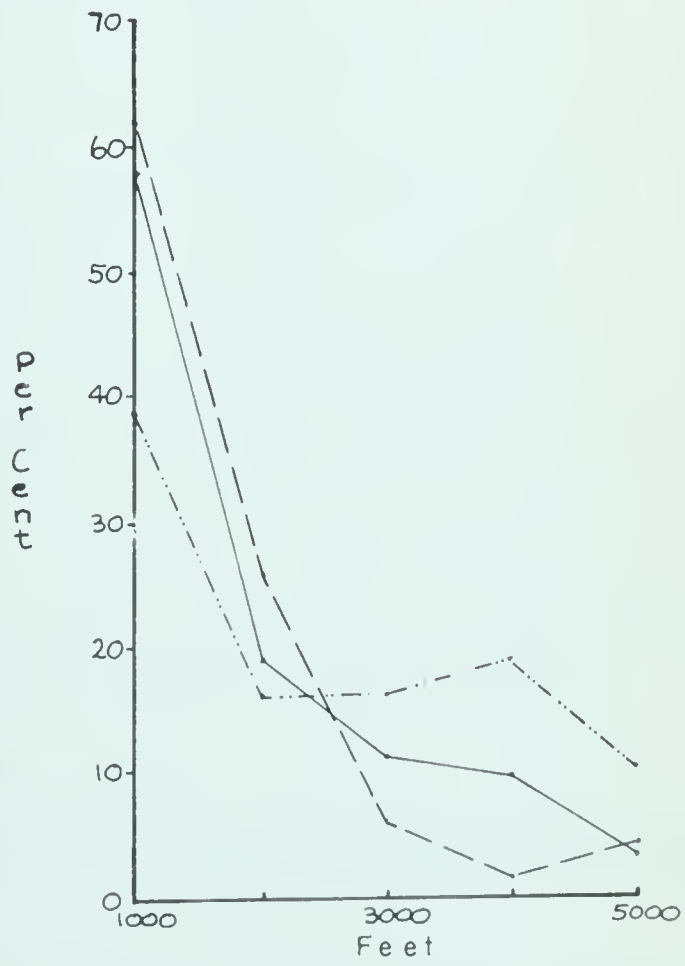
FIGURE 12 - THE CAMPUS FRINGE

KEY

——— Undergrad. Non-Permanent
— · — · " Permanent
— — Grad. Non-Permanent
— · — " Permanent
---- Faculty
— · — Staff

FIGURE 13

THE AREA EAST
of the
CAMPUS



In terms of actual numbers this group is much smaller than the other one having a total population of 256, 243 and 189 in zones one to three. Even the permanent student population has a tendency to be attracted to the University. Three reasons which may account for this are first, some students, such as those from foreign countries, who reside in Edmonton during their university training refer to their Edmonton address as their permanent address. Second, some families move into the campus fringe so that when their children are ready to attend University they will be close to the campus. Third, faculty members with university-aged children who reside in the fringe also would tend to increase the number of permanent students. These reasons were most frequently given by residents in Windsor Park, Belgravia, and Garneau.

Figure 13 presents the curves for three of the University categories in the most populated section of the campus fringe north of 82 Avenue. All three categories, especially the non-permanent undergraduate and graduate students, have a sharp drop in population beyond zone one or the 1,000 foot mark. For the undergraduates the decrease expressed as a per cent was 58.5% to 19.5% , and for the graduates it dropped from 61.8% to 25.7%. Even the undergraduate permanent population showed a marked decrease.

From Figures 12 and 13 a number of features concerning the distribution patterns of the University can be concluded. First, the non-permanent student and faculty patterns are most influenced by distance from the University while the permanent student and staff patterns are least influenced. Second, there is a sharp drop in the population totals beyond the 1,000 foot mark especially for the non-permanent student and faculty population. Third, all six categories are influenced to some degree by distance from the University.

The mode of travel and time required to reach the campus are two

important considerations relating to distance. Statistics relating to mode of travel to the campus by automobile, bus or foot are presented in Table 5.

TABLE 5

PER CENT OF UNIVERSITY POPULATION IN THE CAMPUS FRINGE[1] TO TOTAL UNIVERSITY POPULATION BY MODE OF TRAVEL

	Auto	Bus	Foot	Other
Undergraduates	21.4	11.9	97.4	77.8
Graduates	33.5	52.9	92.1	50.0
Faculty and Staff	29.1	9.0	65.0	57.1

[1]Includes the campus population

Source: Prof. J.J. Bakker, University of Alberta Transportation Survey

As would be expected the percentage of the campus fringe population travelling by automobile or bus is relatively small. The most relevant fact brought out in the table is that almost all the undergraduates and graduates who walk to the University reside in the campus fringe. This fact takes on added significance when it is recalled that about 81% of the out-of-town students live in the fringe, and that the distribution of these students is a dominant factor influencing the degree of impact the University has on the fringe. This suggests two things. First, that walking as a mode of travel possibly could be a useful measure for indicating the approximate extent of the campus fringe for a university having a high proportion of out-of-town students living off-campus. Second, that there is a time-distance factor present which influences how far a person will walk on a daily basis to the University.

A walking time standard of one minute per 100 yards[8] is a measure

[8]This standard is used by Wood, Gordon and Co., Consultants of Vancouver, B.C., for time-motion studies.

which can be used to calculate roughly the distance and time required to reach the campus. If radii of 1,000 foot intervals are drawn with the Cameron Library as centre, then almost all of the fringe is within 6,000 or 7,000 feet. Applying the above standard this would mean being within a twenty-five minute walk of the campus.[9] As noted earlier, the number of out-of-town students decreases rapidly with distance from the campus and most of them are within fifteen minutes of class. For economic reasons and for convenience it is important to out-of-town students to be within easy walking distance of campus and this influences their distribution pattern.

OTHER CONSIDERATIONS

In the study an effort was made to determine the relative importance that the University has had on the residents in the campus fringe. 68.5% of the respondents to Questionnaire A[10] indicated that location in relation to the University was of "major importance," 17.5% indicated that it was of "minor importance," and only 14.0% indicated that it was of "no importance."[11]

North and South Garneau, which are the closest districts to the main academic complex, had the highest percentage returns indicating major importance. These were 80.0% and 76.4% respectively, while Belgravia, McKernan and Windsor Park had approximately 65% each. Strathcona with only 44.4%

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[9] In actual experiments, Mr. Leonard Delicaet, member of Wood, Gordon and Co., walked the distances in slightly less time.

[10] Questionnaire A, Appendix C.

[11] Statistics presented in Appendix D.

was the lowest. Queen Alexandra had 70.6% but this high percentage is due mostly to the small sample return and to the fact that the questionnaires were delivered to the blocks having the most University people. The responses stating minor importance were highest for Strathcona with 38.9% followed by Windsor Park and Belgravia, while South Garneau had only 8.8%. The highest percentage returns, indicating "no importance" tended to come from those districts farther removed from the campus.

When the three categories of importance were measured in terms of distance from the campus it was found that the degree of influence declined with distance from the University. Almost 75% of the replies up to a distance of 2,000 feet indicated major importance, 15% had minor importance and the remaining percentage had no importance. By the 3,000 foot line the proportion of replies for "major importance" had dropped to 53% while both the other two categories had increased.

There are two principal reasons why location near the University has been of importance. First, as a place of residence many students, faculty and staff find that it is convenient and economical both in terms of time and money saved to be close to the University. Second, as a place of rental accommodation the campus fringe area has a good potential. The first reason is self-explanatory while the second requires some elaboration.

Students are mostly interested in rental accommodations during the school term while most faculty and staff members are more interested in purchasing a house. The campus fringe has become a good rental area because of the large demand by out-of-town students for rooms close to the University. Several respondents stated that because of the number of inquiries they had received they had either decided to rent rooms or were seriously thinking of doing so. Many retired people in the Garneau district in particular

found it convenient to rent rooms. Other residents have converted their dwellings with the intention of renting rooms, thereby supplementing their income. Some people have moved into the area and purchased a house for this same reason. The desire to rent rooms even extends to those who are just renting a house. A few houses in Garneau have been purchased for speculative purposes in anticipation that part of the district would be developed as a high density residential area. The absentee landlord then rents the house until it is possible to sell it at a large profit. It was interesting to note that some responses of "no importance" had one or more lodgers - usually students - living in their houses. Although a few did not feel that this was significant they were still benefitting from the closeness to the University. Economic return from renting rooms is certainly a major reason for measuring the importance of location close to the University.

In addition to the above mentioned reasons there is also a number which were discussed earlier. This includes families with children of university age desiring to be close to the campus; old people being close to the University Hospital for possible medical treatment; and also the cultural activities associated with the University and Jubilee Auditorium enhances the desirability of being near the campus.

Consideration was also given to the past associations which members in the household have had with the University to note the impact of the University on the residents.[12] Only 11.8% of the replies for the whole campus fringe stated that no one in the household had had any direct association with the University. Over the years then, most households

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[12]Information based on Questionnaire A. (See Appendix D.)

have had students, faculty or staff members residing with them. In sharp contrast is the present situation where 41.1% of the households have no one presently associated with the University. North Garneau and McKernan had the lowest percentage (33.3%) while South Garneau, Belgravia, Strathcona and Queen Alexandra each had over 45%. This indicates that a substantial number of houses in the campus fringe do not have any person attending or working at the University at the present time.

The University population has had some effect on certain general characteristics of the campus fringe population. Major differences in the composition of the University population are apparent between the City, the campus fringe and its districts. The distribution patterns of the different population categories vary in the fringe with the out-of-town students and faculty being most influenced by the location of the University. This is indicated by the sharp drop in their numbers with distance from the campus. Walking distance is an important factor in the distribution of out-of-town students, and it is this group which has had the greatest impact on the campus fringe.

FIGURE 14

R. E. WINDSOR

WINDSOR

CHAPTER IV

LAND USE

The analysis of the spatial distribution of land uses and their location in relation to one another reveals a number of ways in which the University of Alberta has had an impact on the campus fringe.

The land use distribution presented in Figure 14 shows that the campus fringe is predominantly residential in character. Commercial development is mainly concentrated along two major traffic arteries while most of the industrial land is associated with the Canadian Pacific Railway's line along the east side of the fringe. The University of Alberta campus dominates the public and semi-public land use category. A statistical breakdown of the land use categories is presented in Tables 6 to 9.

The campus is surrounded by residential districts of varied age and character. Because of these variations it is useful to compare the districts to see how the University has influenced them and how this influence differs between them.[1] City zoning by-laws have reduced the possible impact in such districts as Windsor Park and Belgravia by restricting certain uses, e.g. rooming houses, from developing in those areas. Thus, the opportunity of impact is limited in parts of the campus fringe.

ZONING

The zoning in the campus fringe is presented in Figure 15. The following discussion is primarily concerned with the characteristics of

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[1]The penetration of University-related uses into the campus fringe will be discussed in detail in Chapter V.

TABLE 6

LAND USE*

Traffic Zone	Developed Area	Vacant	Total DUs	Residential Single Family Acres	Single Family DU	Two Family A	Two Family Du	Multi Family A	Multi Family Du
2010	202.21	7.57	1142	52.33	441	30.13	499	4.26	202
2020	184.66	0.74	1261	76.13	661	24.26	402	4.43	198
2210	243.90	-	22	1.70	10	-	-	2.00	12
2220	191.07	1.12	484	106.72	476	0.81	8	-	-
2230	249.76	1.48	1048	140.62	783	6.21	100	6.34	165
2310	242.90	2.70	1384	114.28	878	25.91	422	2.77	84
2320	207.36	18.34	700	43.69	349	15.57	264	2.03	87
	1521.86	31.95	6041	535.47	3598	102.89	1695	21.83	748

Traffic Zone	Industrial Light Ind.	Industrial Heavy Ind.	Industrial R R	Public Semi-Public	Streets and Lanes	Commercial
2010	2.51	3.36	8.38	9.71	78.09	13.44
2020	-	-	0.73	8.59	67.01	1.51
2210	-	-	-	229.54	10.66	-
2220	-	-	-	14.49	67.53	1.52
2230	-	-	-	23.54	72.94	0.11
2310	-	-	-	18.73	80.14	1.04
2320	10.39	1.80	12.44	32.35	60.93	22.64
	12.90	5.16	21.55	336.95	437.30	42.29

*Excludes land in river valley

Source: Research Section
City Planning Department
Edmonton
M.E.T.S. 1961

TABLE 7

CAMPUS FRINGE LAND USE PERCENTAGE BREAKDOWN
WITHIN TRAFFIC ZONES

Traffic Zones	Total Developed Area[1] in acres	Resi-dential	Land Uses By Per Cent				
			Public Semi Public	Comm-ercial	Streets	Indus-trial	Total
2010	202.21	42.9	4.8	6.6	38.6	7.1	100.0
2020	184.66	56.8	4.6	1.9	36.3	0.4	100.0
2210	243.90	-	-	-	-	-	
2220	191.07	56.3	7.6	0.6	35.3	-	100.0
2230	249.76	61.3	9.4	0.1	29.2	-	100.0
2310	242.90	58.8	7.7	0.5	33.0	-	100.0
2320	207.36	29.6	15.6	13.5	29.4	11.9	100.0
Total	1521.86	43.4	22.1	2.7	29.2	2.6	100.0

[1]Excludes the river valley land

TABLE 8

AREA OF RESIDENTIAL LAND USES BY PER CENT

Traffic Zones	Single Family	Two Family	Multi Family
2010	60.3	34.3	5.0
2020	72.6	23.1	4.3
2220	99.2	0.8	-
2230	91.8	4.0	4.2
2310	79.9	18.1	2.0
2320	71.3	25.4	3.3
Total	81.1	15.6	3.3

TABLE 9

PERCENTAGE OF DWELLING UNITS BY RESIDENTIAL LAND USE

Traffic Zones	Single Family	Two Family	Multi Family	Number of Dwelling Units per Acre
2010	38.6	43.7	17.7	13.2
2020	52.5	31.8	15.7	12.0
2220	98.3	1.7	-	4.5
2230	74.7	9.5	15.8	6.8
2310	63.4	30.5	6.1	9.7
2320	49.9	37.7	12.4	11.4
Total	59.6	28.0	12.4	9.2

the residential zones. Portions of the fringe are unzoned at the present time. However, the City Planning Department is now preparing comprehensive zoning for the whole City.

RRA-RRB-RRC

These three zones are restricted residential areas for one family dwellings. Houses constructed in these zones must meet certain building requirements and minimum lot sizes. Since the zones are located in the more desirable parts of the City, the land values are high and the quality of housing is good. As Figure 15 indicates, all of Windsor Park and the west portion of Belgravia have restricted residential zoning. Windsor Park is one of the prime residential neighbourhoods in the City and has many influential people living there. The average sale price of houses in 1961 for this neighbourhood was $23,533 (see Table 12).

R-1

This is a one-family residential zone. This type of zoning is found in much of Belgravia and most of McKernan south of 76 Avenue.

Two points regarding the R-1 and restricted residential zones deserve mention. First, accommodation, without separate cooking facilities, can be provided for up to three roomers in a one-family dwelling. Second, basement suites are illegal in these zones although a City-conducted sample survey found almost 100 such suites with the majority of them occurring in Belgravi and McKernan.

RC-1

This is also a one-family residential zone. It is determined on the basis of such features as lot sizes, age of buildings and conversions. Conversions, including basement suites, are permitted in this zone, and it is possible that fraternities may be allowed. RC-1 zones are located in McKernan; in the area south of University Avenue in Queen Alexandra;

FIGURE 15 ZONING

and probably in that part of South Garneau not designated university commercial or R-6 high density apartments.

R-3, R-4 and R-6

These three zones are medium to high density residential zones. R-3 zones are used for the isolated apartment block areas in Belgravia. Much of Strathcona and Queen Alexandra are in R-4 while R-6, which permits high rise apartments, is found along Saskatchewan Drive between 101 and 109 Streets and in South Garneau. Duplexes, walk-up apartments, fraternity and other off-campus residences are permitted uses in these zones.

COMMERCIAL LAND USE

Commercial land use in the campus fringe occupies only 3.2% of the total developed area. A large part of the 41.4 acres is in the form of ribbon development along the major traffic arteries of 82 Avenue and 109 Street. The remaining acreage includes several small shopping centres which serve Windsor Park, Belgravia and McKernan, and the occasional corner store which is more common in the older districts (see Figure 14).

The main retail sections focus on the intersections of 104 Street and 109 Street with 82 Avenue. The retail development around 104 Street formed the business centre for the Town of Strathcona before the amalgamation with Edmonton. The public transit routes and the automobile encouraged commercial development to spread along 82 Avenue. Today a variety of retail stores line the Avenue from the railroad tracks to 106 Street. Then there is a dominance of automobile car lots and showrooms which characterize the next two blocks. This commercial activity is interrupted by several churches and a hospital. From 108 to 109 Street retail stores again reappear as the main commercial use. Along 109 Street the

type of stores are more varied with a number of them catering to the automobile such as a drive-in cleaners and restaurant. The commercial ribbon development along this street is frequently interrupted by other uses and as a result it is not as continuous as that along 82 Avenue.

In addition to serving the local districts these two major commercial streets serve a larger trade area which includes much of Edmonton's South Side. In contrast the isolated corner stores and the small shopping centres serve only a district or portion thereof.

Unlike many universities there has not developed a cluster of commercial stores close to the University of Alberta campus. This is because residential land and later City restrictions have prevented such development. In the early growth of the districts next to the campus none of the streets carried sufficient traffic to stimulate commercial development. The only commercial venture to successfully find a spot next to the campus was Tuck Shop, located on 89 Avenue and 112 Street, kitty-corner to the main campus and its business is clearly University-oriented. Within Tuck Shop are to be found a restaurant, variety store, bank, beauty salon and barber shop.

Tuck Shop had its beginnings about 1921 when commercial activities were carried on in a tent where coffee and candies were sold.[2] It was not until after World War II with the return of many war veterans that the Tuck Shop became a successful venture, and since then it has played a useful role in campus life. The present commercial uses have not always occupied the building. In the mid-1930s the downstairs was used as a banquet and dance hall and prior to 1957 a haberdashery store also

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[2]Interview with Mrs. Smirnoff, restaurant operator of Tuck Shop.

existed.[3] As will be seen later, the greatest impact of the University on commercial establishments in the campus fringe has been on the Tuck Shop.

Location in relation to the University and the distribution of the University population are the two main factors influencing commercial establishments in the campus fringe. This is reflected in the percentage of University customers who patronize the store and in the degree of fluctuations the business experiences as the result of the University winter session (September to April) and the summer session (July to mid-August). Information regarding these two aspects was obtained from interviews conducted with managers of many of the stores in the fringe.

Certain types of commercial establishments such as banks, grocery stores and drug stores afforded the best comparative opportunities since they tend to be most numerous and widespread. University business, i.e. business done with University people whether faculty, staff or students, can best be evaluated by using these commercial types.

Banks

Distance from the campus was found to be a significant factor determining the amount of university business that the bank had. Located closest to the main academic campus is the bank at the Tuck Shop on 89 Avenue and 112 Street. This is the only bank located in the inner zone of the campus fringe and it has 90% to 95% of its business with University people of whom the majority are students. In Windsor Park the two banks on 87 Avenue had 50+ % and 80% with most of the University clientele being faculty members. At about the same distance from the campus but in the opposite direction the bank at 86 Avenue and 109 Street had 60%.

More distant banks such as the one at 76 Avenue and 112 Street had

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[3]Interview with Mr. Stiles, long time resident of Garneau.

30% of its business dealings with University people while the bank at 83 Avenue and 109 Street had only 10% to 15%. At one time this bank had a substantially greater University patronage but the new banks closer to the campus have taken away much of this business. This illustrates the importance of proximity to the campus. Moving towards the east side of the fringe university business at the banks in the vicinity of 104 Street and 82 Avenue accounted for less than 10% of the total business.

Seasonal variations in business caused by the winter and summer sessions were directly related to the percentage of university business conducted, and by the type of University clientele served. With its high percentage of student business, the bank at the Tuck Shop experiences sharp variations in business with the biggest fluctuations occurring at the beginning and end of the winter session. In contrast, the banks in Windsor Park which serve mainly the faculty, do not experience these sharp fluctuations. However, a new University influence, the two recently completed residences, is expected to alter the present situation. There is expected to be an increase in the student business, which will mean that seasonal fluctuations will become more noticeable in the future. Already the bank closest to the residences has had an increase in business resulting from the summer students.

Seasonal variations are more apparent at the bank at 86 Avenue and 109 Street because it has about the same number of faculty and student customers. However, the bank three blocks farther south experienced little variation because of the much smaller percentage of University customers. The McKernan bank at 76 Avenue and 112 Street, on the other hand, did experience a fluctuation in business during the winter session but not so in the summer session in contrast to banks closer to the campus. This can

be explained by the fact that there are many students residing in the district during the winter but relatively few in the summer. The other banks close to the east side of the campus fringe experienced little or no variations in business resulting from the University sessions.

In summary, the University has a strong impact on banks in the campus fringe. Seasonal variations are related more closely to student distributions and as a result there exists significant differences between banks. There appears to be a very close correlation between the distance a bank is from the main campus and the amount of business done with University people.

Drug Stores

The University influence on drug stores is very similar to that of banks with the percentage of University patronage and the degree of seasonal business fluctuations varying with the distance from the campus and the nature of the University population served.

The strongest impact has been on the "drug" store[4] in the Tuck Shop which has over 95% of its business with University people. Sharp seasonal variations are characteristic because of this large University patronage. The importance of this patronage also is indicated by the type of merchandise stocked which includes a wide variety of school supplies, college and pocket books. No other drug store in the campus fringe caters so much to the University population's needs.

Three blocks away at the busy intersection of 88 Avenue and 109 Street the drug store there has about 50% of its business with faculty and

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[4]The store, which is essentially a variety store, used to be a pharmacy but it does not sell drugs at the present time. Because of this, and because the type of merchandise offered is comparable to that sold in drug stores it is included in this commercial use.

students. The store's location on the one-way street leading to the campus enables it to benefit from the University automobile and pedestrian traffic. In addition to causing seasonal variations, the university business has reduced the normal slack period (July and August) for drug stores to one month because of the summer session.

At the drug store in Windsor Park university business represents about 30% of the total business. Because of the nature of the University population served - mostly faculty - the store experiences little in the way of seasonal fluctuations. With the new residences this is expected to change. There will likely be a sharp increase in the number of students patronizing the store and this in turn will mean a more pronounced variation in business.

The drug store at the corner of 82 Avenue and 109 Street does only 15% of its business with University people. This small percentage causes little change in the amount of business the store does. The University influence continues to decrease towards 104 Street. Drug stores in that area have less than 10% of their patronage from University people and the variations in business resulting from the University sessions is negligible.

Grocery Stores

The percentage range for university business with the different grocery stores in the campus fringe was significantly less than that for drug stores and banks. In districts like Garneau and McKernan, which have a large number of roomers, food purchases may be made by the landlord. This indirect influence, although important, would not be included in the percentage of university business and therefore it could explain partially the small percentage range that is present.

The two local grocery stores serving North and South Garneau each

had about one-quarter of their business with University people. Being in the centre of the rooming-house area, both stores experience sharp seasonal fluctuations associated with the winter and summer sessions. One store has to transfer one of its clerks because of the sharp drop in business at the close of the winter session. The presence of the fraternities and also special University functions such as Varsity Guest Weekend are beneficial to business.

The grocery store in Windsor Park also had about one-quarter of its business with University people. Faculty and interns formed the largest segment of University customers. As a result, seasonal fluctuations, although present, are not as distinct as those experienced in Garneau. As with the other commercial establishments in the district's small shopping centre, the grocery store also expects to benefit from the new residences.

University business accounts for about 15% of the business done by the supermarket on 76 Avenue and 112 Street serving McKernan and Belgravia. However, the store does not experience the fluctuations common to the other stores. A new factor has appeared this year which has adversely affected sales. In past years business with summer session students tended to offset the drop in sales due to regular customers on vacation. Because of the use of the new residences and Lister Hall by the summer students, this business has not materialized.

The large supermarket located at the major intersection of 82 Avenue and 109 Street has about 10% of its business with University people. It has benefitted from the fraternities and rooming-houses in Garneau. The store experiences a sharp increase in business at the opening of the winter session and a smaller increase during the summer session. Nine blocks south of this store and just outside the campus fringe is another

large supermarket where the University influence is greatly reduced in terms of both University patronage and seasonal fluctuations.

Others

The University impact on the other commercial establishments in the campus fringe was more difficult to assess because the influence varied with the type of services provided and comparison of different types of stores posed a serious problem. The problem is further complicated by the fact that the service areas vary so greatly between firms. In this section, therefore, mention will be made of the ways in which the firms sampled have been influenced.

The several clothing stores interviewed revealed some differences in University influence. The men's store near 87 Avenue on 109 Street has about 25% of its business with University people - mostly students, and during September and October almost all the business is from them. As the year progresses money becomes more scarce and the sales to University customers drops. Business picks up again during the summer session. At the men's store near 82 Avenue and 109 Street about 15% of its patronage is from University people. When the store was opened originally in 1949 proximity to the campus was of prime importance. The percentage of university business has tended to drop in recent years and the manager attributed this to the greater mobility of students. Unlike the other store it does not experience the sharp seasonal variations caused by the University. University customers account for about one-third of the business at the women's clothing store recently opened on 109 Street just off 82 Avenue; the early fall months and December are the times that university business is greatest.

Restaurants are another type of commercial use which gives some

opportunity of comparison. The University impact is experienced most by the restaurant in the Tuck Shop which has almost all its business with University people. "Tuck" caters specifically to the students, providing a variety of meals within their price range. Because of the less expensive meals the restaurant counts on a large volume of business to make a profit. Last year (1963) during the winter session Tuck averaged 1600 to 2000 customers per day.[5] With such a large University patronage seasonal variations in business are substantial. In the winter a staff of twenty-five is required while in the summer this number is halved. Frequently, on a Friday or Saturday night a large number of students drop into Tuck for a sing-song. The large wall mirrors on either end of the shop are often colourfully painted by students to advertise forthcoming dances and other functions on campus. The congenial atmosphere, and the reasonable prices, makes "Tuck" one of the favourite lunch and coffee-break spots around the campus.

On the other hand the restaurants on 82 Avenue near 109 Street experience little variation even though two of them had 25% and 30% of their business with University people. The reason given by one proprietor was that the tourist trade commences about the same time that the University session ends. One restaurant noticed a sharp drop in Sunday business once the Lister Hall cafeteria was opened on campus. The use of the word "college" has been a factor attracting students to one of the restaurants while another close by has been adversely affected. The restaurant at the corner of 87 Avenue and 109 Street has many University customers and it also experiences seasonal variations. In general, there tends to be

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[5]Interview with Mrs. Smirnoff, owner of the restaurant.

a decrease in the influence of the University on restaurants in the campus fringe.

Two small stores just off 88 Avenue and 109 Street also show a strong University impact. A shoe repair store does over one-third of its business with University people. October is the busiest month when students return to the University. Winter is usually considered to be a poor season for this type of work but with the university business this has not been so. The book bindery next door opened in 1963, and since then university business has continually risen and accounts for over 40% of the total business. Seasonal variations, if any, were still unknown.

It was noted that few stores in the fringe offered discounts to University customers. Those that did included a flower shop, which sold mainly corsages to students; a dry cleaners which offered a 10% discount; and a sporting goods store near 82 Avenue and 109 Street, which occasionally gave discounts to fraternities or University clubs. Some stores were able to present showings of their merchandise on campus. The sporting goods store put on a diving gear show for the Physical Education Faculty while a women's clothing store promoted a fashion show on campus. One bowling alley near the campus has given substantial assistance to the Varsity Bowling Club. In addition, many of the local firms advertise in the Student telephone directory and sponsor candidates in the various campus election activities.

From the sampling of businesses in the campus fringe a number of conclusions can be reached. First, the University impact, in terms of percentage of university business and seasonal variations, is greatest on the commercial establishments closest to the campus. Second, the intensity of the seasonal variations that a firm experiences varies with

the distance from the campus and with the type of University population served. Third, the University population distribution in the campus fringe strongly influences the amount of university business transacted. Fourth, most stores, with the possible exception of those near the edge of the campus fringe, were influenced in some way by the University. Fifth, the new residences are expected to have a major influence on the stores in the Windsor Park shopping centre, while some stores in neighbouring districts will be affected adversely.

PUBLIC AND SEMI-PUBLIC LAND USE[6]

The public and semi-public land use occupies 22.1% of the total developed area in the campus fringe. Two-thirds of the 337 acres is taken up by the University of Alberta campus. Most of the districts have less than 10% of the land devoted to public or semi-public uses with Garneau and Strathcona having only 4.8% and 4.6% respectively. As the land use map (Figure 14) indicates, schools, parks and playgrounds are the dominant land users in this category.

The careful neighbourhood planning done in the newer districts of Windsor Park and Belgravia has resulted in a better integrated neighbourhood unit than that found in the older districts. Community facilities such as shopping centres, schools, parks and playgrounds are more conveniently located and more adequate in size. Lacking the benefits of planning and generally laid out in the grid street pattern, the older districts provide inadequate facilities for the local population. The

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[6]This category includes the University of Alberta, schools, parks and playgrounds, churches and other buildings of a public or semi-public nature. The land in the river valley, which is mostly parkland, has been excluded.

aging of the districts plus the deficiencies in facilities have contributed to the gradual functional obsolescence which is taking place. This has encouraged a transition in land use from a low density single family area to a higher density multi-family area having a significantly large number of rooming-house conversions, many of which are rented by University students. As noted in Chapter III this transition has brought about a change in the population structure. A decline in the number of families with children and a relatively small percentage of the population under fifteen years of age are two examples of this change. The physical and functional obsolescence going on in the older districts is making them less suitable for raising a family and as a result many families are leaving and being replaced by roomers.

It is a fortunate coincidence that the transition in land use has been occurring at roughly the same time as the sharp increase in University enrolment. Although it is difficult to measure, the demand for accommodations by University students has speeded up the change. Garneau and Strathcona,and to a lesser degree Queen Alexandra, have been most affected.

In Garneau, functional obsolescence has been speeded up by the heavy volume of University traffic using its streets, as well as the inadequate provision of park and playground space. Strathcona is even less well off in park space. Although Queen Alexandra has over 15% of its land in public or semi-public use its recreational space is poorly located and inadequate to serve family needs. These districts are clearly more suited as rooming areas and they have attracted many students.

The better provision and location of community facilities and a

street system which discourages all but local traffic has enabled the newer districts to be better suited for families with growing children. Such neighbourhood designs should retard premature functional obsolescence and also resist transition to multi-family use. Residential zoning which was not present in the older districts will protect the newer ones from the invasion by University-related uses such as fraternities and rooming-house conversions. This will mean only a minimal number of roomers staying in the districts and as the distribution of out-of-town students shows, in Figure 8, this is the case.

Although no specific inquiries were made with the various churches in the campus fringe,many close to the campus have a large number of University people in their congregations. Some have active young peoples' groups with University students playing an important role.

The huge hospital complex on campus comprising the University of Alberta Hospital, the Colonel Newburn Pavilion and the Aberhart Sanitorium, although not run by the University, are closely associated with it. This is especially true with the University Hospital. Many doctors on staff teach on campus and many student nurses take their training at the hospital. The hospital complex fulfills an important function for the City.

The influence of the University on the City as a whole is difficult to assess. The extension programs, special activities, such as Varsity Guest Weekend, the many famous lecturers visiting the campus and so forth have contributed greatly to the cultural life of the City. The University has contributed to the economic prosperity of the City as the developing campus skyline would suggest. Sales of goods and services to University people runs into millions of dollars annually.

In addition, many private individuals benefit from renting rooms. Being a Provincial institution the University land is tax free, which creates some burdens for the City Treasury.

The large University Farm south of the campus is tax exempt also. Lying within the City Limits and occupying some 724 acres in the fastest developing residential section of Edmonton, the Farm has created many developmental problems. However, when the advantages and disadvantages are weighed the University of Alberta clearly is a major asset to the City.

STREETS AND LANES

Over one-third of the campus fringe is devoted to streets and lanes. This land use category is second only to residential use in total area covered. Figure 1 shows that the traffic circulation in the fringe is accommodated by a grid street layout in the older districts and by a curvilinear street layout in the newer districts west and southwest of the campus.

Roads in the campus fringe can be classified as major arterial streets, collector streets or local streets. In the first category are 109 Street and 82 Avenue. These two arterial streets expedite the movement of traffic in the southwest part of the City. 109 Street channels the north-south or cross-river traffic while 82 Avenue functions as the major east-west arterial street on the south side. University-bound traffic from the north side usually crosses the North Saskatchewan River at the Groat, High Level or 105 Street bridges. The arterial streets help to carry much of the University-generated traffic to the campus.

Within the fringe itself there are a number of collector streets which handle the district traffic. These are 87 Avenue, 114 Street and 76 Avenue. In the vicinity of the campus 88 Avenue and 112 Street also

could be considered as special type of collectors since they carry a substantial flow of traffic.

With the exception of 76 Avenue all the above-mentioned arterial and collector streets play a role in the daily circulation of the University traffic. The peak rush periods are in the morning from 8 A.M. to 9 A.M. and in the evening from 4:30 P.M. to 5 P.M. During these periods congestion is common in the vicinity of the main academic campus - especially in North Garneau. The problems relating to traffic congestion and parking are discussed in greater detail in Chapter V.

The third category, local streets, covers the remaining roads in the fringe and as the name suggests it serves local traffic. Mention has been made of the grid and curvilinear street patterns. The latter pattern is more desirable for a residential district since it tends to discourage through traffic. For this reason it provides greater safety. In the grid street pattern, however, this desirable safety goal is not achieved since every street is a potential through street and if conditions are such each one could carry a heavy volume of non-local traffic. Garneau, which is adjacent to the University, one of the largest traffic generators in the City, is a case in point. The collector streets in the vicinity of the campus are unable to cope with the heavy peak hour traffic because of the narrow streets and inadequate traffic lights at key intersections. As a result, many of the side streets are used in an attempt to by-pass the congested areas. This heavy traffic on side streets contributes to the functional obsolescence of the district by increasing traffic hazards, by reducing the efficiency and operation of daily activities, and by making the district less desirable as a place to raise a family. The traffic problems encountered in Garneau and intensified by the existing grid layout have likely speeded up the rate of

transition from single family dwellings to multi-family conversions. The extent of this influence in empirical terms, however, is difficult to assess.

Windsor Park is the only other district that experiences traffic problems relating to the University and these are restricted to 116 Street, which forms the western boundary of the campus. The curvilinear design of the neighbourhood discourages most of the University traffic from using it. However, if a development such as a new academic complex, a football stadium, or a large parking lot were constructed on the west side of the campus this could have a deleterious effect on the blocks across the street. It could lower land values and reduce the amenities of the present landscape and this could initiate more frequent sale of homes and possibly could start some rooming-house conversions. One Windsor Park resident living opposite the new residences on 117 Street, stated that the traffic flow along that street, had resulted in a substantial turn-over of home owners along the street during the past few years. The desirability of the location was clearly being influenced by the University traffic. These minor developments occurring on the east side of the district hint at possible future functional obsolescence resulting from outside influences - in this case University influences.

RESIDENTIAL LAND USE

Residential land occupies more area than any other land use in the campus fringe. This was just over 43% of the total developed area. Considering the land use distribution by district there is a significantly higher percentage of land in residential use in those districts closest to the University than in the more distant ones of Strathcona and Queen Alexandra. (see Table 6). This is because these latter two districts have

a much larger acreage of land in commercial and industrial uses.

The land use map presented in Figure 14 includes four residential uses: single family, two family, converted houses and multi-family dwellings. In the available statistics (Table 6) converted dwellings are included as part of the multi-family accommodation. However, because of the significance of converted dwellings in this study this category has been mapped separately.

Single family dwellings are by far the most extensive residential use in the campus fringe occupying over 81.1% of the residential area. All the districts had at least 60% of their residential land in this use with Windsor Park and Belgravia having over 90%.

Two family dwellings occupy most of the remaining residential land with this use being most common in the older districts of Garneau, Strathcona and Queen Alexandra, where there is a greater mixing of the three main residential categories. McKernan was the only newer district with a relatively high percentage of land in two family dwellings.

Multi-family dwellings which includes apartments, conversions and other multi-family structures occupy only 3.3% of the residential acreage. In the case of Strathcona, Garneau and Queen Alexandra most of the dwellings are conversions. This is a reflection of an area in transition with the conversion of single family units to multi-family dwellings. Most of Belgravia's acreage in this use is accounted for by apartment blocks. These blocks have attracted a number of University people as a comparison of Figures 8, 9, 10, and 14 show. One significant development relating to multi-family use is the construction of high rise apartments which is now taking place in South Garneau and Strathcona. The implications of this new feature to the campus fringe landscape will be discussed in a later

chapter.

Net residential density, i.e., the number of dwelling units[7] per acre of residential land, is a useful measure for comparing the various districts in the fringe. This measure reflects both the differences in housing stock and size of lots (see Table 9). The highest densities occur in Queen Alexandra, Strathcona and Garneau. These three districts, being the oldest in the fringe, have been more susceptible to a change in land use and this change has been mostly from single family to two family or multi-family dwellings.

Because of the changing land use these districts have a greater mixture of housing types while the newer districts are predominantly single family in character. Up to the present time in Garneau the transition in land use has been largely the conversion of single family houses. This, however, is rapidly changing in South Garneau, where many of the houses are being cleared for high rise developments. In Strathcona many old dilapidated houses have been removed and replaced by two family dwellings, walk-up apartments or high rise structures. There are also a number of rooming house conversions scattered through the district. In the older part of Queen Alexandra conversions have been the principal change in residential use.

Another factor which influences the net residential density is the average lot size. In the districts east of 112 Street, which were built-up first, most of the lot sizes are about 33 feet by 132 feet, whereas in the newer parts of the fringe the area per dwelling is larger and more variable in shape. As a result there are more single family structures per acre in

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[7] "Dwelling unit is a structurally separate set of living quarters with a private entrance either from outside the building or from a common hall inside." (Census of Canada definition of dwelling.)

the older districts than in the new ones. This difference in lot size is well illustrated in the air photo of the campus fringe in Figure 1. There is a particularly sharp contrast between the density of housing in Windsor Park and Garneau. In addition the older districts also have a higher proportion of two family and multi-family dwellings. These two factors thus influence the density of dwelling units per acre in the campus fringe.

There is quite an appreciable difference in the percentages which the different residential categories have in area and in dwelling units as Table 7 shows. Single family dwellings account for only 59.6% of the total dwelling units although this use occupies over 81% of the residential area. Two family and multi-family dwellings with 28.0% and 12.4% respectively, had a significantly higher percentage of the total number of dwelling units.

HOUSING CHARACTERISTICS

Age of Housing

The development of the districts in the campus fringe was described in detail in the historical section of Chapter II, pages 16 to 22. Age of housing is one of several contributing factors influencing the degree of impact the University has had and will continue to have on the various parts of the fringe. A map showing the age of housing is presented in Figure 16. A brief summary of the major features of housing development is adequate here.

The oldest districts in the fringe lie east and southeast of the campus. The earliest districts to be almost completely built-up were North Garneau and South Garneau. Although Strathcona and Queen Alexandra were actually started sooner construction was much slower and more widely scattered. As a result, both these districts are characterized by housing

FIGURE 16

R. F. WINDSOR

E. WINDSOR

of a mixed age. In contrast, most of the construction in Garneau took place prior to 1929.

The newer districts built since 1940 lie south and west of the campus. The majority of the housing construction in McKernan took place in the late 1940s. This housing development extended southwards from Garneau and then swung westwards into Belgravia. By 1950 much of the area from 118 Street east between 74 and 77 Avenues was built-up. The remaining sections of Belgravia were completed during the next ten years. In Windsor Park most of the houses in the blocks between 116 and 118 Streets north of 87 Avenue were constructed between 1940 and 1949 while the rest of this planned neighbourhood was completed in the 1950s.

Size of Housing

The characteristics of the housing have been an important influence in the density and distribution of the University population in the campus fringe. The size of the houses has a direct bearing on the potential holding capacity a district can have. For example, a district such as Garneau with many large, two story or higher structures has a potentially greater capacity than a district such as McKernan which has mostly one story houses,

Many of the houses built in the fringe prior to 1919 were large two or two and a half story wood frame structures. Garneau has the greatest concentration of such dwellings while in the other older districts they tend to be more widely dispersed. In the blocks closest to Saskatchewan Drive in North Garneau a number of large brick houses were also built. Many of these larger dwellings, because of their size, have attracted University-related uses, such as fraternities, other off-campus residences and rooming-house conversions.

Houses built after 1920 have tended to be more variable in size but are generally smaller than the pre-1920 housing, with predominantly a stucco finish. Houses in Garneau provide a good example of this change in construction design and type of materials used. Although many of the new houses such as in Windsor Park and Belgravia have floor areas comparable in size to the older large dwellings, these dwellings are located in areas where zoning regulations prevent rooming-house conversions. Generally, however, the majority of houses built since 1920 are smaller and are one or one and a half storys in height.

The size of the house has a direct bearing on its potential holding capacity and the likelihood of a house being converted is often influenced by its age and condition. The large, old houses in the fringe have been most susceptible to conversion from single family to multi-family use. The distribution of the University population reflects the variations in size and age of housing and this is especially noticeable in North and South Garneau. In the blocks between 86 and 89 Avenues from 111 to 112 Streets there is a predominance of large, old houses. Many of these have been converted for roomers. As a result these blocks have a high density of University people. In South Garneau some of the blocks have smaller dwellings and the number of roomers is substantially less. For example, the block bounded by 83 and 84 Avenues between 111 and 112 Streets has many small one story dwellings. With the exception of one large, converted house which accommodated eleven of the thirty-two University people in the block, most houses only could accommodate three or less roomers. Comparison of other blocks in Garneau revealed similar differences.

Although large, two story houses have a greater potential holding capacity than small, one story structures, this potential may not always

be realized. For example, a couple or a family with several children may own a large house but not wish to rent, while a single person in a small house may be able to accommodate a number of students. Thus the desires of the owner, the size of the family and other personal considerations will influence whether a house,large or small,will be used for roomers or not.

Knowledge of the characteristics of the housing in the campus fringe is useful in explaining the distribution patterns of the University population, as well as being a useful tool in attempting to determine the potential for rooming accommodations throughout the campus fringe. In addition, other major factors such as zoning regulations, demand for accommodation and distance from the campus must be considered in the evaluation.

The life expectancy of a house, i.e. the average number of years that a house is expected to last, is another important consideration relating to age and conversion. The normal life expectancy of a wood frame structure is from 50 to 70 years depending upon the maintenance and the quality of the construction. During the next twenty years much of the housing stock in Garneau, Strathcona and Queen Alexandra will be ripe for replacement. Even now some of the older housing is being replaced by two-family dwellings, walk-up apartments and high rise apartments. Thus the older dwellings either undergo replacement or are converted for multi-family occupancy. This transition is presently underway in the older districts where many of the houses are nearing completion of their life expectancy. It is a fortunate coincidence that many large houses are aging and are becoming ripe for conversion at the same time that the demand for student rooming accommodation is steadily increasing in the campus fringe. However, since the majority of these houses are in fair or poor condition, the quality of the accommodations offered is not always of the highest standard. During the

next twenty years most of the housing stock in the area of North Garneau designated for University expansion will have reached their life expectancy. This is also fortunate in the sense that the area will require redevelopment and it will not involve the demolition of relatively new houses.

Condition of Housing

Condition of housing is another factor requiring consideration since it partially influences the degree of impact that University-related uses have on the adjacent residential districts. It is a measure of the quality and upkeep of housing, and it is based on a number of criteria pertaining to the exterior of the building. This measure, along with age of housing and incompatible uses, form the three main indices used to determine the degree of blight or the process of deterioration of buildings. In this study, condition of housing is useful in analyzing the areas most susceptible to invasion by University-related uses.

The three types of condition of housing are as follows:

"Good Condition -- all buildings in sound structural condition, not necessarily the most modern but nevertheless free from any form of deterioration

Fair Condition -- buildings of reasonably sound construction, but in need of minor structural repair

Poor Condition -- buildings which display visible signs of serious structural deficiencies that make necessary major repairs uneconomic."[8]

Housing rated fair is vulnerable to blight and may already show definite signs of deterioration, e.g. decaying porches and outside steps; poor roof condition. Housing rated poor is badly deteriorated and is likely to cause the spread of blight to surrounding structures.

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[8]City of Edmonton, Urban Renewal, A Study of the City of Edmonton 1963/64, Part 2, p. 2 and p. 4.

The distribution patterns of the three categories are presented in Figure 16, and the total number of houses in fair or poor condition are shown in Table 10. Most of the housing in fair or poor condition is found in the older districts of the campus fringe, especially in Garneau, Strathcona and Queen Alexandra. When condition of housing is compared with the age of housing (Figure 16) a definite correlation is apparent. A helpful explanation of this correlation is brought out in the City of Edmonton's Urban Renewal Study which states that

> Under normal conditions a direct relationship exists between the age of a building and its condition, with an obvious deterioration with age. However, the rate of deterioration is shortened or lengthened by the amount of re-investment in the form of maintenance. Similarly the initial quality of construction to a large extent determines the life of a structure.[9]

TABLE 10

NUMBER OF HOUSES IN FAIR OR POOR CONDITION

	Fair	Poor
North Garneau	115	4
South Garneau	137	5
Strathcona	120	47
Queen Alexandra	186	63
McKernan	80	21
Belgravia	5	3
Windsor Park	-	-

Although Garneau has only a few scattered dwellings in poor condition, over 42% of the total housing stock in the district is in fair condition. Most of these houses are located in the blocks between 110 and 112 Streets from 83 to 90 Avenues. There is a definite relationship between condition and age of housing here since most of the dwellings were constructed prior to 1929. Many of these dwellings, predominantly wood-frame structures, are

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[9] Ibid., p. 2.

showing signs of deterioration as they approach the end of their life expectancy. Because most of these dwellings are two or more storys in height, they have been very susceptible to conversion for multi-family use.

The mixed age of the housing stock in Strathcona has resulted in a somewhat more scattered distribution of houses in fair or poor condition. As Figure 16 indicates, though, a significant portion of the dwellings are showing signs of deterioration and this is most characteristic of the houses built prior to 1929. Generally the houses in poor condition were constructed before or shortly after 1910. Some of the blocks having a high percentage of houses in such condition, are undergoing a transition with many of the old, dilapidated houses being removed and replaced by two family dwellings, walk-up apartments or high rise apartments. In addition, there has been a number of conversions to rooming-houses although the density is far less than that for Garneau.

Queen Alexandra exhibits a similar pattern to that of Strathcona. Of the 63 dwellings in poor condition the majority are the product of old age and/or poor construction. The main concentration of housing in fair or poor condition is in the older section of the district lying north of University Avenue. Although much of the housing south of this avenue was built after 1940, the scattered ones showing deterioration are mostly pre-1919 structures. The remainder, built after 1930, are usually the result of poor maintenance and/or poor quality construction. This is partially due to the fact that Edmonton's Building Code has been enforced effectively only since 1936. Prior to that year the quality of construction varied.[10]

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[10] Ibid., p. 2.

The fact that Strathcona and Queen Alexandra are old districts, lacking proper conveniently located community facilities, and having a significant number of deteriorated houses, appears to have influenced the distribution patterns of some of the University groups, especially the faculty and staff. Because both Strathcona and Queen Alexandra are aging many of the houses are suitable for conversion. Many of these rooming-house conversions are used by University students. However, because of the greater distance from the campus there is a decrease in demand for rooms and therefore the density of out-of-town students is significantly below that of Garneau (see Figure 8). This is particularly true in the case of Queen Alexandra.

Most of the remaining houses in the campus fringe which are in fair or poor condition are located in McKernan. The main concentration is in the older section north of University Avenue. Once again there is a close relationship between age and condition of housing. Belgravia and Windsor Park, being the newest districts, understandably have few dwellings showing signs of deterioration.

In summary, the densest concentration of housing in fair or poor condition is located in the older districts of Garneau, Strathcona and Queen Alexandra. There exists a close relationship between age and condition of housing in the campus fringe, and the spatial distribution of this housing appears to influence the number of conversions and the distribution patterns of the various segments of the University population.

Property Values

Property values is another element in the study of residential areas which helps to provide some additional information on the effect the University of Alberta has had on the land in the campus fringe. To consider this aspect, statistics were collected on the unit foot assessment

rate and the average sale prices of property in the various districts.

TABLE 11

AVERAGE UNIT FOOT ASSESSMENT RATES

The Range	33'	44'
North Garneau	$98 - 90	-
South Garneau	90 - 80	-
Strathcona	76 - 68	-
Queen Alexandra	66 - 58	-
McKernan	80 - 66	-
McKernan	55 - 51 (in newer part viz. 111 St. west to 114 St.)	
Belgravia	64 - 51	-
Windsor Park	75 - 70	-
Queen Alexandra	54 - 50	44 -40

The influence of the University on assessment rates is clearly shown in an analysis of the average unit foot assessment rates applied to the various street frontages in the campus fringe.[11] The lots along Saskatchewan Drive have the highest assessed rates because of the prime location overlooking the North Saskatchewan River Valley. Although the rates tend to decrease away from Saskatchewan Drive there are significant variations present in the fringe which can be partly attributed to the University.

The assessment rate takes into consideration the size of the lot frontage. Smaller lots having a thirty-three foot frontage are assessed at a higher rate than lots having a wider frontage. In general, most of Garneau, Strathcona, Queen Alexandra and the northern part of McKernan have been assessed on a thirty-three foot frontage while the remaining parts of the campus fringe have been assessed on a forty-four foot or wider frontage. These latter areas, because they contain larger lots,

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[11]Information obtained from the Assessor's Department, City of Edmonton.

have lower assessed values. This difference in lot sizes in the campus fringe has proved useful since it permits a better comparison of the influence that the University would have on land values for both the old and new districts in the fringe.

North Garneau,which is directly adjacent to the main academic complex, has the highest assessment rates of any of the older districts. The range was from $90 to $98 per unit foot. The rate decreases uniformly southwards reaching a low of $66 per foot along University Avenue. There is a very sharp drop in the assessment rate on the east side of 109 Street, where the unit foot rate is $14 lower than for the opposite blocks in Garneau. In addition to the rates decreasing southwards from Saskatchewan Drive there is also a more gradual decrease towards 104 Street. The assessment rates ranged from $76 to about $66 per unit foot in Strathcona while Queen Alexandra had a range of $66 to $58 for similar sized lots. In the four blocks between University Avenue and 77 Avenue bounded by 114 and 115 Streets, the assessed rate decreased southwards from $70 to $60 per unit foot. This was the only section along the south edge of the campus with thirty-three foot lots. Comparison of the assessment rates of blocks adjacent to the south and east sides of the campus shows that those blocks in North Garneau are over $20 per unit foot greater than those in McKernan and Belgravia.

In the newer sections of the campus fringe where lot frontages are generally forty-four feet or wider, a somewhat similar pattern is apparent. Windsor Park, which is closest to the University academic campus, has assessed rates ranging from $70 to $75 per unit foot while in Belgravia, on the other hand, the range is from $54 to $64. The lowest rates occur in Queen Alexandra, south of University Avenue, where the range was mostly between $40 and $44 per unit foot.

This discussion on unit foot assessment rates points up a number of features relating to land values. First, the highest values based on either a thirty-three foot or a forty-four foot lot frontage occur in the districts of Garneau and Windsor Park which are directly adjacent to the main academic campus. Second, the assessment rates decrease both southwards and eastwards in the campus fringe,reaching their lowest values in Queen Alexandra. Third, a block with thirty-three foot lots along the south side of the campus has a substantially lower rate than blocks in North Garneau along the campus's east side. Fourth, the assessed unit foot rates drop sharply in those blocks east of 109 Street and north of University Avenue. From these points it seems apparent that the presence of the University of Alberta has had some influence on land values in the campus fringe.

To supplement the above findings, information was collected on the average sale price of properties during 1961. This information is presented in Table 12. According to the Residential Chapter of the Draft General Plan for the City of Edmonton, Garneau, because of its proximity to the University, has higher property values than other areas of comparable age in the City. These areas generally had values ranging from $8,200 to $13,000.

TABLE 12

AVERAGE SALE PRICE OF RESIDENTIAL HOUSES

Windsor Park	$ 23,533
North Garneau, South Garneau, McKernan (north of Univ.Ave.)	15,380
Strathcona, Queen Alexandra (north of Univ.Ave.)	13,800
Belgravia (west part)	21,154
McKernan, Belgravia (east part)	14,373
Queen Alexandra (south of Univ.Ave.)	10,593

Source: Draft General Plan, City of Edmonton, Chapter IV, Residential Development.

Although many houses in Garneau are older than most of those built in McKernan, the average sale price was some $1,000 higher. The difference in average sale price is even greater in Strathcona and Queen Alexandra, where they were $1,500 and $4,800 respectively,below those in Garneau. These differences would suggest that proximity to the University is a factor contributing to the higher property values. The highest valued property occurs in the newer districts of Windsor Park and Belgravia where sale prices averaged from $5,800 to $8,200 higher than that for Garneau.

The variations in property values in the campus fringe has had an influence on the distribution of some of the University population, especially the faculty and staff who usually seek more permanent living accommodations. The average salary is lower for staff members and because of this few of them can afford homes in Belgravia or Windsor Park. These districts, however, have attracted a significant number of faculty members. Garneau, because of its convenience and generally attractive environment, also has had many faculty members but with the University expansion and new zoning taking place there has been a gradual exodus to other districts outside the campus fringe.

If the faculty member is unable to purchase a home in Garneau or one of the other new sections in the fringe he usually looks to one of the newly developing districts such as Grandview Heights in the southwest part of the City. Although houses are less expensive in Strathcona and Queen Alexandra these districts offer few of the amenities of the newer, planned neighbourhoods. Being older districts, and having a mixture of housing types of varied age and condition,probably has been an influential factor in the choice of a location. In addition, Queen Alexandra is less accessible to the main campus so that it offers few attractions to most faculty members.

On the other hand, a relatively large percentage of the University population in Strathcona and Queen Alexandra are staff members who find the cost of housing more within their economic range. Even though the staff member may wish to live as close to the campus as possible, accessibility seems to be secondary to the cost of housing. The widespread distribution of staff members throughout the City would also suggest this.

INDUSTRIAL AREAS

Industrial land use occupies the smallest percentage of land in the campus fringe. The Canadian Pacific Railway, with a rail line extending along the east side of the fringe, through Strathcona and across the High Level Bridge, covers two-thirds of the industrial area. The remaining industrial land is concentrated east of 104 Street next to the railway. McKernan, Garneau, Belgravia and Windsor Park are completely void of industry.

The significant feature relating to industry is the fact that the industrial strip along the east side of the fringe creates a relatively wide break between the residential areas on either side. This has the effect of influencing the distribution of University population, with a noticeable drop in the numbers of University people occurring to the east of this break. For this reason the industrial strip and 104 Street was used as the eastern boundary of the campus fringe.

CHAPTER V

UNIVERSITY-RELATED USES

University-related uses and the University population distributions are the main criteria used for delimiting the campus fringe. A close inter-relationship exists between the two since most of the University-related uses deal with housing accommodations, i.e., residential conversions including rooming-houses, fraternity houses, and off-campus residences. Other uses include University traffic and houses converted for University purposes. It was pointed out in Chapter II that the inner and outer zones of the campus fringe could be determined by the distribution of this group of uses. Their distribution also indicates the areas which have been most susceptible to invasion. These areas are the ones which have been influenced most by the University.

STUDENT ACCOMMODATIONS

The University has had a marked influence on the campus fringe. The demand for accommodation by University people, especially students, has resulted in a gradual change from a single family use to a multi-family use in certain parts of the fringe. Rooming-houses, fraternity houses and other off-campus residences have invaded the fringe. In addition, many single family dwellings accommodate up to three roomers. Although this type of accommodation is quite widespread it is very difficult to detect except from a detailed population survey such as was done for Garneau.

In this house-by-house survey it was possible to analyze the number and range of accommodations available. Table 13 presents a statistical

breakdown of the number of dwelling units with accommodation for different numbers of University people, the majority of which are students. The table reveals some interesting facts regarding accommodation in Garneau. First, North Garneau, with 55.3%, had a significantly higher percentage of dwellings offering accommodations to out-of-town students than did South Garneau which had only 39.5%. Second, North Garneau provided a substantially greater number of dwellings accommodating six or more students. This was 19.7% compared to only 5.2% for South Garneau. Third, the majority of houses in South Garneau had accommodation for one or two roomers. Most of the other districts had a similar percentage range of accommodations as South Garneau with the exception of Belgravia and Windsor Park, which had few houses offering accommodation for more than two roomers.

TABLE 13

HOUSING ACCOMMODATIONS

	Sample Returns	% of Houses Accommodating Univ. People	Number of University People Accommodated 1 - 2	3 - 5	6 - 10	11 +
North Garneau[1]	-	63.6[3]	50.9	29.4	13.9	5.8
South Garneau[1]	-	52.7[4]	69.7	25.0	2.6	2.6
Belgravia[2]	59	52.6	96.6	3.4	-	-
McKernan[2]	60	66.7	66.7	22.2	11.1	-
Strathcona[2]	36	52.8	66.7	22.2	11.1	-
Queen Alexandra[2]	17	53.0	75.0	25.0	25.0	-
Windsor Park[2]	14	64.3[5]	100.0	-	-	-

[1]Detailed house-by-house survey

[2]Results from returns to Questionnaire A of Sample Survey

[3]Of this percentage 55.3% are out-of-town students

[4]Of this percentage 39.5% are out-of-town students

[5]Predominantly faculty

These findings suggest that the degree of impact and the amount of penetration into the campus fringe can be indicated (a) by the density of

accommodations for six or more roomers,and (b) by the proportion of dwellings by block providing accommodation for University persons.[1] North Garneau, being the closest to the main academic campus, has experienced the greatest impact in terms of these two measures. However, a detailed survey for the whole campus fringe is needed to give a more empirical basis to the measurement of impact. A comparison of the land use, population distribution and density maps (Figures 3, 8, 9, 10, 11 and 14) does indicate the decreasing influence the University has had with distance from the campus.

It seems that the proportion of dwellings which house University persons compared to the total dwellings per block could complement the measure of University population to total block population which was described in Chapter II. For example, districts such as Windsor Park and Belgravia have a significant number of University persons who own houses but in terms of numbers they represent only a small proportion of the total block population as Figure 3 shows. Thus, a dwelling ratio map, combined with a population ratio map, would present a better overall picture of the relative impact the University has had on the campus fringe.

Many residents in Edmonton who are attempting to rent rooms to students often leave their addresses with the Student Housing Service at the University. Figure 17 shows the distribution of this available accommodation. Although the distribution plotted does not represent all the rental accommodations available it does show the major areas offering such accommodation. The distribution is concentrated in the campus fringe with areas to the east and south of the fringe having the only other significant amount of listed

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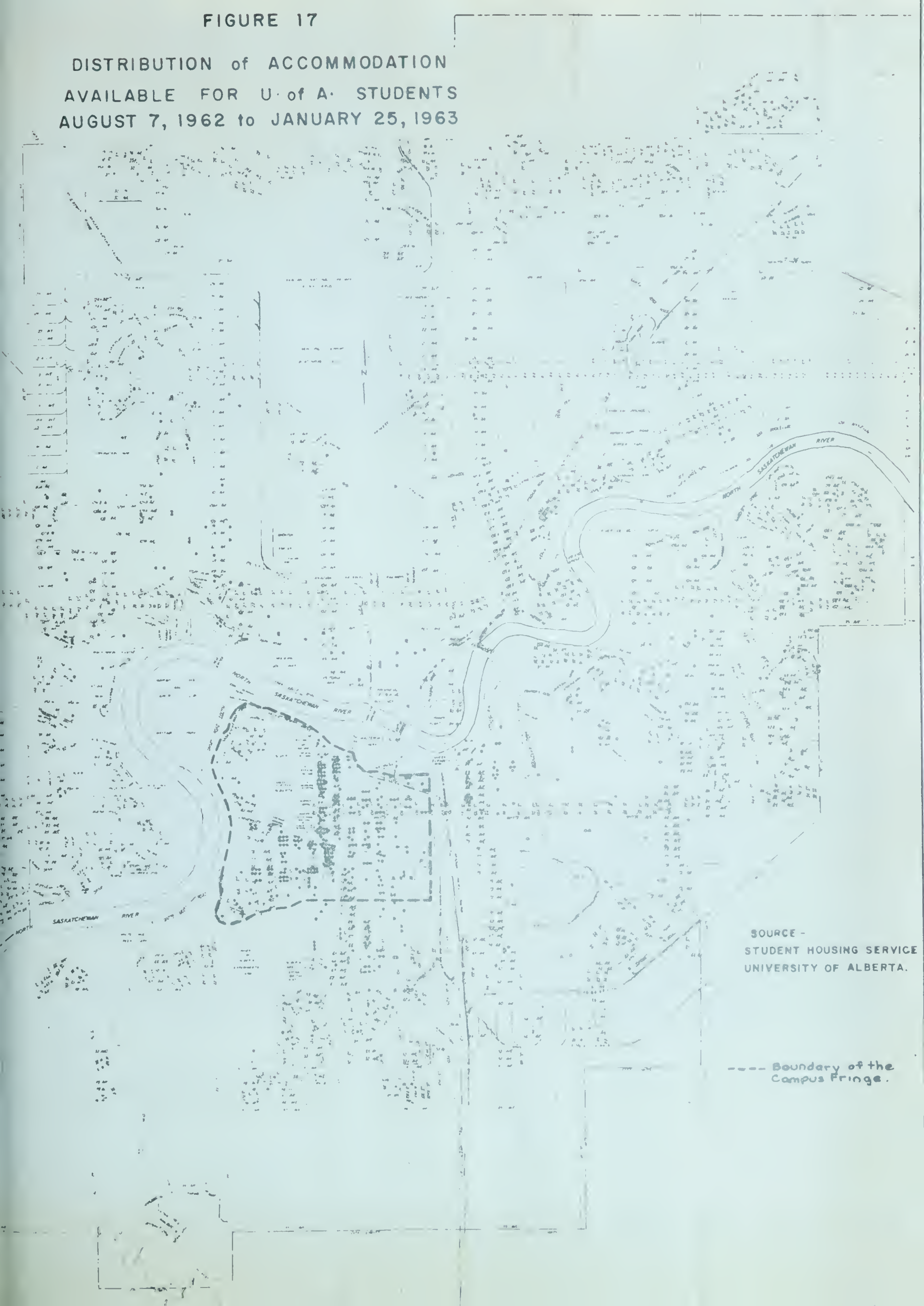
[1]The term "dwelling" as used here refers to the structure, whether it be a single family, two family or multi-family dwelling, excluding apartment blocks. Each of these dwellings would be counted as one.

FIGURE 17

DISTRIBUTION of ACCOMMODATION AVAILABLE FOR U·of A· STUDENTS AUGUST 7, 1962 to JANUARY 25, 1963



SOURCE -
STUDENT HOUSING SERVICE
UNIVERSITY OF ALBERTA.

---- Boundary of the Campus Fringe.

3 and 4. Characteristic rooming-houses in Garneau.

5. Fraternity house (Delta Upsilon) in North Garneau.

6. Typical housing in McKernan, south of the campus.

accommodations.

The types of housing accommodation available in the fringe are quite varied, ranging from single rooms and suites to whole houses. No attempt was made in this study to analyze this particular aspect of housing since this information was both difficult to obtain and of limited value.

RESIDENTIAL CONVERSIONS

Residential dwelling conversions is one type of University-related use which has become characteristic of much of the campus fringe. It is a product of the large demand for rooming accommodation by University people who desire to live as close to the campus as possible.

The term conversion as used in this study has two meanings. It may mean a change in residential land use, e.g. single family dwelling to multi-family dwelling, or it may mean physical alterations to a house for the purpose of renting rooms. Depending on the circumstances one and/or the other meaning may be applicable. A good example of where both meanings apply is in the case of a fraternity,which purchases a single family dwelling and makes physical alterations to the structure so that it becomes a rooming-house or multi-family dwelling. One example of a change in land use only would be the situation where a group of University people co-operate in renting a single family dwelling thereby converting it for multi-family use. Physical alteration is a common occurrence in the fringe. Often an owner will convert most of his house into rooms, thus converting his residence into a rooming-house. Another example of physical alterations, but without a subsequent change in land use, is the conversion of part of a single family dwelling to provide accommodation for up to three roomers. This is permissible according to the City of Edmonton Assessor's Department,

and does not change the type of residential classification used for assessment purposes. Only on a house-by-house plotting of the University population is it possible to discover the distribution of single family dwellings having one to three roomers, and although this type of rooming accommodation is recognized as being of importance in the campus fringe, the lack of a detailed survey except for Garneau did not permit a proper analysis of this aspect of accommodation. The lack of available information did not permit a detailed discussion of this type of conversion and therefore it has been omitted from this section.

The distribution of converted older dwellings, rooming-house conversion and other possible multi-family dwellings[2] is shown on Figure 14. Table 14 presents a breakdown by district.

TABLE 14

CONVERSIONS

District	Conversions*	Other Possible Multi-family Dwellings	Total
North Garneau	62	24	86
South Garneau	41	13	54
Strathcona	51	13	64
Queen Alexandra	20	31	51
McKernan	16	53	69
Belgravia	-	11	11
Windsor Park	-	-	-

*Including older converted dwellings and rooming-house conversions

[2]"Other possible multi-family dwellings" was determined from the number of families per dwelling. If a single or two family dwelling had five or more families residing in it this suggested that the dwelling was really multi-family, and in function was likely accommodating a number of roomers.

As with most other University-related uses, dwelling conversions are influenced by distance from the main academic complex. North Garneau, being the closest district, has the greatest density of dwelling conversions with the majority of them being concentrated in the blocks between 110 and 112 Streets. (Over half of the total number of conversions are in Garneau.) Although the distribution is much more scattered in the other districts, this type of accommodation is generally located north of University Avenue and east of 112 Street -- in other words, mainly in the older sections of the campus fringe.

There is a definite relationship between the age and condition of housing and converted dwellings. Conversions are most common in the older districts with the age of a dwelling having an important bearing on the number of conversions. Houses built prior to 1929 are most susceptible to conversion, especially since they also tend to be the largest houses. Old age, lack of proper maintenance, or poor quality construction all contribute to the physical deterioration of a house. As noted in the previous chapter there is a close correlation between age and condition of housing. Dwellings in the campus fringe in fair or poor condition are generally old and many of them have been converted. The best example of this correlation between age, condition and conversion of housing occurs in North Garneau along 88 Avenue between 111 and 112 Streets. In this block most of the houses were constructed before 1929. The majority of them are in only fair or poor condition and have been converted into rooming-houses.

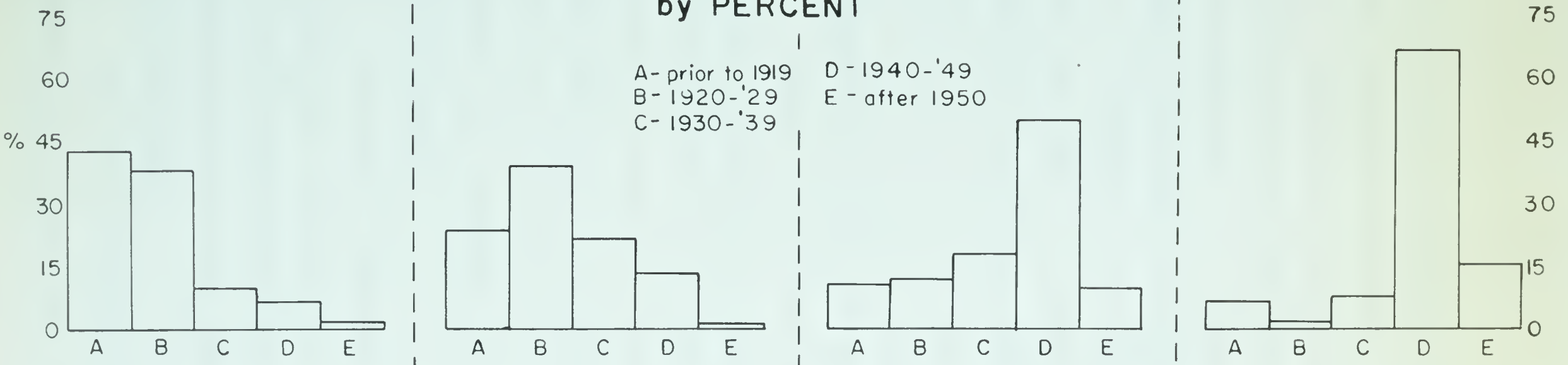
From available statistics it is possible to note a close relationship that exists between age of housing, condition of housing and converted dwellings. This is illustrated effectively by the graphs in Figure 18 which includes the districts along the east and south sides of the campus.

FIGURE 18

NORTH GARNEAU | SOUTH GARNEAU | SECTION of McKERNAN | SECTION of BELGRAVIA

AGE of HOUSING by PERCENT

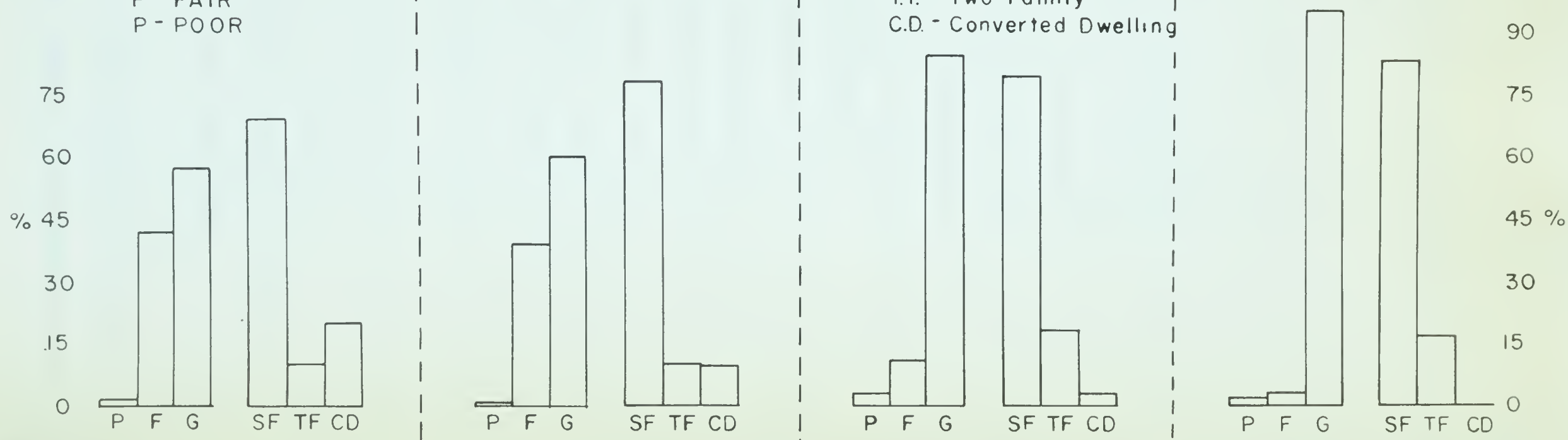
A- prior to 1919
B- 1920-'29
C- 1930-'39
D- 1940-'49
E- after 1950



CONDITION of HOUSING and RESIDENTIAL LAND USE by PERCENT

G - GOOD
F - FAIR
P - POOR

S.F. - Single Family
T.F. - Two Family
C.D. - Converted Dwelling



It is a useful cross-section since there is a gradual change in age of the districts from North Garneau to Belgravia.

North Garneau is the oldest of the four districts, with almost 80% of the total housing stock being built by 1929. Of this housing stock 42% was considered in fair condition and 2% in poor condition. 20% of the total number of dwellings were classified as being converted for rooming-houses.

A somewhat similar pattern is found in South Garneau. In this district, only 60% of the housing had been constructed by 1929. However, almost 40% of the housing stock was in fair or poor condition which roughly was the same as North Garneau. The major difference between the two districts is in the percentage of converted dwellings to total housing stock.. South Garneau's 10% was only half that of North Garneau.

Sharper differences become more apparent as one moves into the newer districts of McKernan and Belgravia. In McKernan, just over one-fifth of the housing dates prior to 1929. Approximately 15% of the housing stock was showing evidence of deterioration and this percentage was significantly lower than that for the two Garneau districts. Another major difference from these two districts was in the number of converted dwellings. In McKernan this residential classification represented only 2.7% of the district's housing.

The graph for Belgravia includes that portion of the district east of 115 Street. Even though this portion is the oldest part of the district it had only 10% of its dwellings built prior to 1929. The number of dwellings in fair or poor condition was only 3% and there were no converted dwellings.

The close correlation between age and condition of housing and conversions as brought out in the graphs can be further substantiated by a

comparison of the land use, age of housing and condition of housing maps for the campus fringe. The main conclusion is that the older districts are much more susceptible to conversions and as pointed out earlier, the majority of these conversions are occupied by University persons.

The distribution of other possible multi-family dwellings, i.e. houses classified as single or two family dwellings but occupied by five or more families, is more extensive than the above mentioned conversions. The inclusion of this group gives a better picture of the larger rooming accommodations available in the campus fringe. Many of these dwellings could not be detected from a "windshield" survey or from the City assessment cards.

As in the case of these possible conversions, most of them are located in the older parts of the campus fringe. However, there is also a number which are present in McKernan and Belgravia in housing built mainly during the 1940s. Few of these possible multi-family dwellings exist south of 76 Avenue. This distribution suggests that some of the newer areas contiguous to the older ones are also gradually being invaded. Thus, the increasing demand for rooming accommodation is spreading into certain newer portions of the campus fringe along the south and southeast corners of the campus. The fact that this particular area is zoned RC-1 (residential conversion) has enabled this gradual transition in land use to occur and this type of zoning also recognizes the need for accommodation close to the campus.

The time and locations where physical alterations were being made to dwellings for the purpose of renting rooms are further considerations which help to shed some light on the impact of the University.[3] Con-

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[3]This section of the discussion is based on results obtained from Questionnaire A.

version as used here means physical alteration of all or part of a house and includes one room or more converted for roomers.

Almost 40% of the replies to the questionnaire stated that rooms had been built or converted for lodgers. It was found that the districts adjacent to the south and east sides of the campus tended to have a greater number of conversions. In Garneau most of the conversions occurred in the blocks north of 85 Avenue. The older section of McKernan north of University Avenue was subject to most of the conversions in that district while in Belgravia conversions were generally restricted to those blocks between 77 and University Avenues from 114 to 115 Streets. Table 14 presents the statistics on conversions. Belgravia is of special interest since it is the only recently developed district which has had a substantial number of conversions. All these conversions have taken place in an area zoned RC-1 (residential conversion). However, it has been the demand for rooming accommodation which has stimulated the owners to convert part of their houses. Although conversions have made their biggest imprint on the older districts, it is interesting to note the invasion of this use into areas with housing built during the 1940s. With the exception of Windsor Park, all the districts had a relatively large number of conversions with North Garneau and McKernan having the most.

Of the total number of conversions only 2.9% occurred prior to 1944, with the majority of these occurring in Garneau, thus indicating the early impact on this section of the campus fringe. With the return of war veterans to University after the end of World War II there was a sharp rise in demand for accommodations. During the 1945-49 period over 15% of the conversions occurred with McKernan having the largest number. The University enrolment dropped after a peak was reached in 1948, and it was not

until the early 1950s that this peak was surpassed. The out-of-town students have formed a significant percentage of the total enrolment since that time. As a result, the demand for rooms has been steadily rising in the campus fringe. During the period from 1950 to 1959 some 35.5% of the 124 dwellings were converted, with McKernan, Belgravia and North Garneau being the main districts. In the last four years up to 1963 this trend has continued, with South Garneau and Belgravia having half of the 22 new conversions. An additional 15.3% of the responses did not know when the house or portion thereof had been converted,but most of them occurred in North Garneau, South Garneau and Strathcona.

From these findings a number of points can be made. First, although the majority of conversions have taken place in the older districts there has been some invasion into parts of the newer districts. Second, the districts adjacent to the campus,with the exception of Windsor Park, have had a greater number of conversions. Third, provision for rooming accommodation through conversions was experienced earliest in North Garneau which was closest to the main campus. Fourth, up to 1945 only a small percentage of houses had been converted. However, since then there has been a steady increase in conversions in the campus fringe, and this trend has tended to be accelerated slightly in recent years. Fifth, nearly all of the conversions result from the demand for rooms by University people. Rooming-house conversions appear to be predominantly a post-war phenomenon with Garneau being the only district experiencing a relatively large number of conversions prior to that time.

Although most of the converted dwellings in the campus fringe, as shown on Figure 14, have mainly University persons as roomers,it is difficult to assess without a proper survey whether the proportion of non-

University roomers increases with distance from the campus. However, it appears that this is so since the University students have to compete with non-University people for rooms in districts such as Strathcona and Queen Alexandra; especially in the sections farthest removed from the campus.

FRATERNITY HOUSES

Of the various University-related uses found in the campus fringe the fraternity house, clearly identified by the Greek letters on the front, is one of the most easily distinguished. Fraternities first gained recognition from the University of Alberta around 1930 and since that time the University has taken an active interest in their affairs. As of the 1962-63 winter session there were eight men's and three women's fraternities,but since that time two more men's and one women's fraternity have been added.[4] As these last three are just being established the discussion will deal mainly with the eleven.

Two major considerations have influenced the choice of location of fraternity houses. The first is concerned with the proximity of the house to the University and the second relates to the size of the house.[5] The fraternity house located near the campus offers many advantages. It is within convenient walking distance of classes; it is easily accessible to all members; it is generally close to the other fraternities; and it enables the fraternity to take an active part in various University activities. In order to fulfill its role more easily the fraternity finds it essential to have a large house. This enables a certain number of members to reside in

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[4]A list of the fraternities and their addresses is presented in Appendix E.

[5]Based on information collected in Questionnaire B.

the house and it also offers more space for house activities.

With its many large, old houses, suitable for conversion and close to the main academic buildings, Garneau has been particularly susceptible to the invasion of this University-related use. Figure 19 shows the high degree of concentration of fraternities in Garneau, with the majority of them being in North Garneau. No fraternities are found elsewhere in the campus fringe. As Figure 19 indicates, there has been little nucleation or development of a "fraternity row" such as that found along St. George Street at the University of Toronto. The fraternities, although relatively close to one another, are scattered throughout the district. The only semblance of nucleation occurs along 88 Avenue between 111 and 112 Streets where four fraternity houses are located. The three new fraternities will be located in the same general area as the existing ones.

When colonization by the fraternities first began, houses were chosen with location and size in mind. Early efforts often were met by resistance on the part of the seller and as a result the fraternity usually had to settle for a smaller house and a less convenient location. After the end of World War II, when many war veterans returned to their studies, there developed an urgent need for rental accommodation. This encouraged rooming-house conversions. As this type of development became more acceptable it became easier for the fraternities to purchase larger and better located houses. In order to find more suitable houses, fraternities have become an important competitive land use in Garneau.

This competition is best seen in the mobility of the fraternities. With the exception of only two of the eleven fraternities, Pi Beta Phi and Kappa Sigma, all have made at least two moves and many have made three. On only one known occasion was a fraternity located outside Garneau, and

GARNEAU

FIGURE 19

UNIVERSITY-RELATED USES

1962-63

- Houses Converted for University Purposes
- Fraternity Houses
- Off-campus Residences and Clubs
- University Hospital Related Uses
- University Property
- Inner Zone of the Campus Fringe

0 500 FEET

SASK. DRIVE

91 AVE.

90 AVE

89 AVE

88 AVE

87 AVE

86 AVE

85 AVE

84 AVE

83 AVE

82 AVE.

112 STREET

111 ST.

110 ST.

109 STREET

Park

SCHOOL

PARK

that was Sigma Alpha Mu, which had a house in Strathcona for one year. This indicates the strong influence proximity to the campus has on the choice of location. The main reason for moving, however, was the pressing need for a larger house with more parking space, if possible. Since most of the lots are 33 feet by 132 feet, parking was very limited. Delta Upsilon has been one of the few fraternities fortunate enough to obtain a large house and lot with fairly adequate parking accommodation. The total membership of the fourteen fraternities, including actives and pledges, is almost 850. Assuming that one out of three members has a car then this would give some idea of the traffic generated by the fraternities. With the small lots, however, most of them are capable of accommodating only a small proportion of the total number of cars. The remainder find space on the streets or lanes. The parking problems relating to the fraternities is dealt with in detail under the heading Traffic Circulation.

In terms of the number of students accommodated, the fraternities generally rank as some of the largest rooming-houses in the campus fringe. The eleven fraternities (1962-63) provided accommodation for almost 155 out-of-town students, most of whom are undergraduates. This represented close to one-fifth of the total number of non-permanent undergraduate students residing in North and South Garneau. The number of students accommodated in the various "frat" houses ranged from nine to twenty, with the average being fourteen per house.[6]

Since most of the fraternities are located in North Garneau, the district designated for University expansion, they will be forced to move. Their displacement and possible areas of relocation will be described in the next chapter.

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[6]See Appendix B for size of accommodations.

As a University-related use, the fraternity house has been helpful in delimiting the inner zone of the campus fringe. In terms of distribution all but one of the fraternities are within two blocks of the main academic buildings, while the majority of them are within one block. Their distribution has been a contributing factor to the high ratio of University population to total block population in some blocks as a comparison of Figures 3 and 19 show. No block having a fraternity had less than 30% of its population consisting of University people.

In summary, the fraternities are concentrated in Garneau because of the opportunity of having a large house in close proximity to the campus. As most fraternities are within two blocks of the campus, distance appears to be a major factor influencing location. No other district in the campus fringe has been invaded by this University-related use. The fraternities fulfill an important function as rooming-houses, accommodating a substantial number of out-of-town students with an average of fourteen per house. The locations of the fraternity houses and their large student accommodations have made this University-related use valuable in delimiting the inner zone of the campus fringe.

OFF-CAMPUS RESIDENCES

Besides the fraternities there are eleven special off-campus residences in the campus fringe. Seven of these are operated by various religious organizations, two are used by University Clubs and two are University women's residences.[7]

Just as in the case of the fraternities, convenient proximity to

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[7] See Appendix E for list and size of accommodations.

the campus and a large house have been the prime factors in determining the location of the residences. It is, therefore, not surprising that their distribution patterns are quite similar.

All the off-campus residences are located in Garneau with the majority of them being in North Garneau in the blocks immediately adjacent to the main academic buildings, as Figure 19 shows. With only one exception, all the residences are in the inner zone of the campus fringe.

The one exception, St. John's Institute, is the largest off-campus residence, with accommodation for some 80 students. It is also the farthest removed from the campus of any of the fraternities or other residences. This is largely due to circumstances. Originally, land was obtained on 82 Avenue to build a residence for University students of the Ukrainian Orthodox faith. When expansion became necessary in 1960, it was decided to construct a new wing onto the existing building rather than attempt the more difficult task of finding adequate land closer to the campus.

The two off-campus clubs with houses in North Garneau are the Student Christian Movement and Club Internationale. The University operated two women's residences, Garneau House and University House, but they will be replaced by two fraternities at the start of the 1964-65 winter session.

Altogether, the off-campus residences provide accommodation for about 175 students, of which half reside in North Garneau. (When this total is combined with the 155 for the fraternities it forms a significant portion of the total number of out-of-town students living in Garneau.) Only the Lutheran's Student Centre and Club Internationale do not offer any student accommodation. For the others the size of accommodation varies from 6 at the Student Christian House to 79 at St. John's Institute. The presence of these residences contributes greatly to the high ratio of

University population to total block population which is found in some blocks in Garneau, as a comparison of Figures 3 and 19 show. The most notable example is in the block with St. John's Institute, which accounts for most of the University population.

Unlike the fraternities, most of the off-campus residences generate little traffic and as a result they do not experience the parking problems which confront the fraternities.

Since most of the off-campus residences are located in the area of University expansion this will mean moving into a new area. The problems of relocating will be discussed in the next chapter.

UNIVERSITY TRAFFIC

University traffic, whether moving or parked, is having a seriously adverse effect on Garneau, especially North Garneau. The traffic problem in the campus fringe is concentrated in this district which is opposite the main academic buildings. The other districts in the fringe experience little or none of the difficulties affecting Garneau and any University traffic passing through these districts is usually channeled along the major arterial or collector streets.

The heaviest volume of traffic in the vicinity of the campus moves along 87 and 88 Avenues, 112, 114 and 116 Streets, and Saskatchewan Drive. Generally those parts of the above mentioned streets in Garneau are 66 feet wide, while in the other districts they tend to be closer to 100 feet in width. In addition to having narrow streets the road system in Garneau is laid out in a grid pattern. These two factors, combined with the heavy traffic, have contributed to the serious traffic problem. This problem can be discussed best in terms of moving and parked cars.

In considering the problem relating to moving traffic, two main factors of importance are the narrow streets and the grid street pattern. To reduce the accident hazards and improve circulation, 88 and 89 Avenues were made into one-way streets. 88 Avenue is largely used by cross-river traffic using the High Level and 105 Street Bridges as well as some of the westbound traffic on the south side. Because it is an important collector street it has been necessary to limit parking to only one side. The remaining westbound traffic flows along 87 Avenue and 82 Avenue and from there to the parking areas on or near the campus. 87 Avenue in Garneau forms an important collector street linked to the 109 Street arterial. Its narrow width of 66 feet between 110 and 112 Streets is a major factor contributing to traffic congestion, especially for homeward-bound traffic. Also contributing to the congestion is the lack of adequate traffic lights and their poor synchronization. This results in frequent congestion on streets leading to and from the campus during the morning and evening rush hour periods.

Congestion initially starts with the traffic backing up on 87 Avenue and on 112 Street. But with the grid street pattern it is easy for much of the traffic to avoid the trouble spots by using the side streets paralleling these main routes. As a result, many of the streets, especially those north of 85 Avenue, are subject to heavy vehicular traffic. Although the volume of traffic is heaviest during the rush hour periods these streets are also relatively busy during the other parts of the day because they are favourite parking areas for students. This heavy non-local traffic has been a contributing factor to the more rapid functional obsolescence which is taking place in Garneau. Efforts so far to improve traffic circulation in the vicinity of the University have been to make 88 and 89

Avenues one-way streets and to prohibit parking on one or both sides of some of the streets in Garneau. Eventually the more costly effort of widening 112 Street and 87 Avenue will be imperative to facilitate movement and remove one of the major obstacles causing traffic congestion.

Traffic from the west crossing the Groat Bridge uses Saskatchewan Drive and 87 Avenue to reach the campus, while the traffic from the south uses 109, 112 and 114 Streets. Although the volume is heavy it does not produce the serious problems that confront Garneau because it is constantly moving along streets which are better designed to carry such traffic. The chief problem, however, is not the car in motion but rather the car when it is parked at its destination.

The present parking problem experienced in the campus fringe is caused by a combination of factors. First, the University, with approximately 7,600 registered cars,[8] is one of the largest traffic generators in the City of Edmonton. Second, the sharply increasing University population is being accompanied by an ever-increasing car registration. Third, the University is unable to accommodate all the cars on on-campus parking lots. Fourth, the close proximity of Garneau within convenient walking distance of the main academic buildings makes this district a very desirable place to park. Fifth, because of the limited on-campus parking there is a substantial overspill of cars into the immediate campus fringe area.

The parking situation as it now exists is illustrated in Figure 20. Only the largest campus parking lots have been delimited. Not shown are the smaller lots and much of the on-street campus parking which are used

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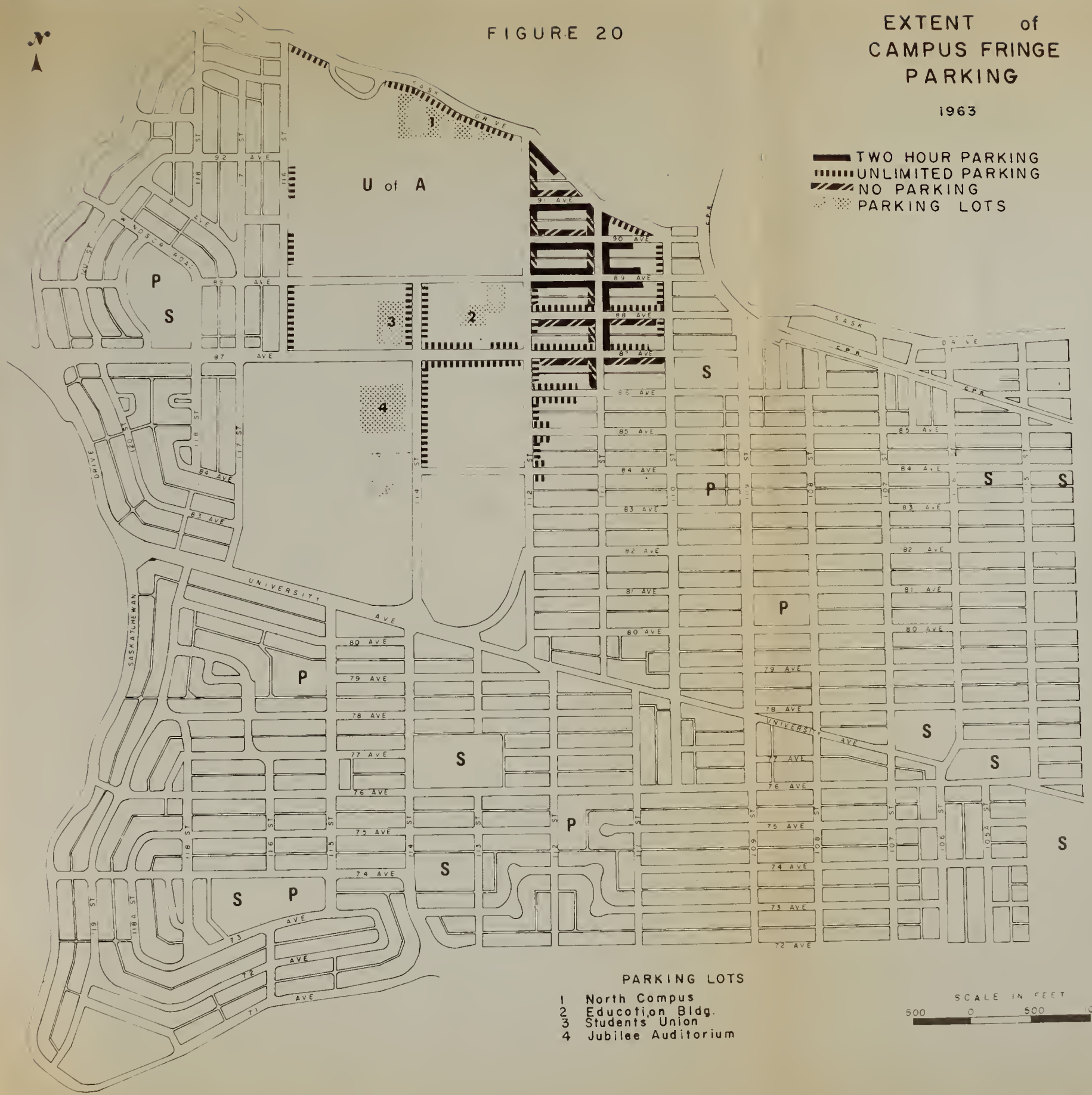
[8]Interview with Mr. Edmonds of the Parking Office: 7,600 registered cars includes 4,800 student, 1,700 faculty and 1,100 staff cars. This, however, includes duplicate listings.

FIGURE 20

EXTENT of CAMPUS FRINGE PARKING

1963



mainly by faculty, staff and visitors. The present on-campus parking accommodation, excluding on-curb street parking, is 1,900.[9] This also includes the 450 spaces available on the east lot of the Jubilee Auditorium, which is not owned by the University. It has been useful in alleviating the shortage of on-campus parking space. Although not all the registered cars go to the campus every day the on-campus parking is unable to meet the demand and as a result a substantial overspill occurs in the campus fringe.

It is expected that the North Campus lot will become a site for buildings sometime during the next six to eight years. However, new lots will be constructed along the west and northwest parts of the campus which are presently vacant. The parking lot on the west side will serve mainly the engineering complex which will be built there. It is apparent that the proposed and existing lots will be inadequate to accommodate the future University population which will exceed 20,000 by 1980. This will mean an expansion of the overspill into the fringe, most likely to the east and south of the present parking area. As the parking spreads in these directions, distances will increase to the point where a student parking on 84 Avenue in Garneau, will have approximately the same distance to travel to the main academic buildings as a student parked on 116 Street in Windsor Park. The implication is that once distances become roughly equivalent in these two directions then gradual penetration into Windsor Park may occur. This spreading of the parking into Windsor Park will be stimulated by the development of the Engineering Complex on the west side of the campus. It should be noted here that most of the blocks between 116 and 118 Streets are laid

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[9] Interview with Mr. J.R.B. Jones, Campus Development Officer.

out in a grid pattern,and thus would be relatively easy to penetrate. So far the demand for space has been met by 116 Street, which forms the west boundary of the campus.

Parking as a University-related use in the campus fringe has had its greatest and only impact on Garneau, especially North Garneau. There has been no penetration of this use into any other district. As mentioned, 116 Street on the east side of Windsor Park has some University parking and it is the only district outside of Garneau to experience this use.

The extent of the parking in the campus fringe is shown in Figure 20. The densest concentration occurs in North Garneau up to a two block depth from the campus. The amount of University parking rapidly decreases southwards into South Garneau with the parked cars being located as close to 112 Street as possible. The University parking distribution coincides almost exactly with the inner zone of the campus fringe. This University-related use is restricted to a very small part of the fringe with distance from the main academic buildings being the major factor influencing the distribution pattern.

Figure 20 also differentiates between those streets with parking restrictions, i.e. no parking or two-hour parking, and those with unlimited parking. The severity of the parking problem in the fringe and the areas most affected are best indicated by the streets having two-hour parking signs. Without exception, they are all located in North Garneau. The use of "no parking" signs along one side of many Garneau streets indicates the heavy traffic movement in the district and the need for better traffic circulation along the narrow streets.

Fraternities, which are local traffic generators in the district, also contribute to the off-campus parking problem. With the exception of

possibly one or two, most are unable to provide adequate parking space for their cars. The main attempt to alleviate the problem has been to convert the backyards and crowd as many cars onto the fraternity property as possible. Often there is an overspill into the narrow lanes. Examples of these situations are shown in the photos on the next page. Parking in the vicinity of a fraternity is at a premium while social activities are in progress.

The effect of all the University-generated traffic, including that of the fraternities, has been to prevent the proper functioning of Garneau as a residential district. Local residents and friends are unable to park in front of their houses,and delivery service is difficult and frequently must be accomplished by double parking. In the streets closest to the campus there are seldom any vacant spaces from 7:45 A.M. to late in the evening. The large volume of traffic along the narrow streets is also hazardous and unsafe, particularly to children. The once safe and quiet environment of Garneau has been rudely interrupted by the automobile and it has been a contributing factor to the faster transition of the district into a rooming-house area. Because of its close proximity to the campus, within convenient walking distance of the main academic buildings, North Garneau has become very susceptible to the invasion of University traffic.

Summarizing the main points, the University of Alberta is one of the largest traffic generators in Edmonton. The impact of its traffic on the campus fringe has been largely concentrated in the inner zone which is mainly North Garneau. University traffic has contributed to the growing functional obsolescence of the district. The narrow streets, the grid street layout,and inadequate traffic lights,have intensified the traffic congestion experienced. Since the University is able to accommodate only

7. Tuck Shop, the most University-oriented commercial establishment in the campus fringe.

8. The main academic complex with the S.U.B. parking lot at right centre.

9. North side parking lot.

10. Jubilee Auditorium parking lot with Belgravia in the background.

APR . 64

11. Parking in backyard of Zeta Psi Fraternity, and along back lane in North Garneau.

12. Portion of Windsor Park most likely to be invaded by University traffic.

SEP . 64

13. Main cause of traffic congestion - 87 Avenue and 112 Street intersection. Beginnning of 4:30 P.M. rush hour traffic.

14. Parking invades North Garneau, 89 Avenue - Tuck Shop to the right.

about one-third of the registered cars there is a significant overspill into the fringe. There is likely to be an expansion of this University-related use in the future with Windsor Park possibly being affected.

UNIVERSITY PROPERTY IN THE CAMPUS FRINGE

The University population at the University of Alberta is expected to surpass the twenty thousand mark by 1980. In order to ensure that sufficient land is available to meet the 1980 space requirements, the University announced "its intention to acquire for necessary expansion of its Edmonton campus all properties in North Garneau...."[10] Because of a proposed south freeway[11] which would cut through the east side of North Garneau, the University has restricted purchases to the area bounded by 110 and 112 Streets between 87 Avenue and Saskatchewan Drive. Since 1962 monies have been allocated for the purchase of any properties offered for sale. Although the University Act[12] gives the Board of Governors powers of expropriation, these powers have not been used at the present time. Land acquisition is on a piecemeal basis, and as of August 1964 approximately 35 houses have been purchased.[13] Many of these houses are being converted for University purposes to help meet the demand for space.

The present major building boom on the campus has been unable to

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[10] Public announcement made in July, 1962.

[11] Metropolitan Edmonton Transportation Study, Volume 2, 1964.

[12] Chapter 35L, Section 25, subsection (1) g and h.

[13] Information from Bursar's Office.

keep pace with the needed space requirements. With the recent completion of the two new residences the University Administration has taken steps to try and alleviate the serious space shortage. This has included the conversion of Assiniboia Hall, Pembina House, and three staff houses[14] near 87 Avenue and 112 Street from residences into space for offices, graduate students, research and low service laboratories.[15] It also has been necessary to expand into the campus fringe by using some of the purchased houses for University purposes.

As of August 1964, some eleven houses in North Garneau are or will shortly be used by various academic departments for graduate and departmental offices and research space (see Figure 20). In addition, a number of other houses are being used by other University-related uses including fraternities, campus clubs and women's residences. Commencing in the fall of 1964 the two women's residences, Garneau House and University House, which were operated by the University, will be taken over by two fraternities.

Most of the remaining houses in North Garneau owned by the University are being used for rental purposes, with the Royal Trust Company acting as rental agents on behalf of the University. The main clientele who are renting the houses are the former owners and University people. Frequently a group of students join together to rent a house.

University-purchased property in the campus fringe is limited to a large portion of North Garneau. The actual distribution is a scattered one,

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[14] See Figure 4.

[15] Interview with Mr. J.R.B. Jones, Campus Development Officer.

as Figure 20 shows, and it reflects the present method of land acquisition being used by the University. The houses purchased are used for University purposes or other University-related uses and for rental accommodation.

USES RELATED TO THE UNIVERSITY HOSPITAL

Brief mention should be made of uses relating to the University Hospital, found in the campus fringe. At the present there has been very little invasion of such uses into the fringe. Up to last year there were three graduate nurses' residences and one converted house used for doctors' offices. They were all located directly across from the Hospital. The Nursing Aide School, on 84 Avenue, operated by the Provincial Department of Public Health, is the only other use which may be classed as relating to the Hospital.

During the past year a part of South Garneau -- a strip 150 feet deep along 112 Street from 82 to 87 Avenue -- was zoned University Commercial. This zone permitted uses which were associated with the University or the Hospital. Since that time, a five story medical building has been under construction at the corner of 84 Avenue; a 75-bed Cancer Clinic building is planned in the block to the north; and at the corner of 87 Avenue a dual function residence-commercial complex is proposed, which will provide much needed clinical teaching space and professional doctors' offices for members of the University Faculty of Medicine. These new facilities opposite the Hospital will mean greater convenience in the treatment of patients, but will generate much more traffic in the district.

COMPARISON WITH OTHER CAMPUS FRINGES[16]

The University of Illinois at Champaign, Illinois, has an enrolment of 23,000, almost triple that of Alberta's. In contrast to Alberta's campus, the Illinois one is a large " 'sprawling and multi-nucleated' campus development" consisting of a number of major and minor academic complexes.[17] This has produced variations in the pattern of the campus fringe.

Several important relationships were noted in the campus fringe. First, "the age of non-University structures surrounding the campus appears to affect the width of the fringe."[18] The fringe is widest in the areas having the oldest, most obsolescent structures, and narrowest in the areas of least obsolescence, and of highest assessed values. Second, "the density of non-University development in the fringe is related to the degree of building density on the campus itself."[19] This occurs in the older areas. Third, "the uses which appear to have the greatest penetrating power are housing, particularly dormitories, fraternities and sororities, and rooming-house conversions."[20] Similar relationships were also found in the University of Alberta campus fringe.

The University of Wisconsin-Milwaukee has a student enrolment of 6,300. In contrast to the University of Alberta, it is predominantly a

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[16]This section is based on papers presented at the Annual Meeting of the Association of American Geographers in 1962.

[17]Ronald R. Boyce and Jerome D. Fellman, Developing a Research Framework for the Campus Fringe: The Case of the University of Illinois, p. 2.

[18]Ibid., p. 5.

[19]Ibid., p. 5.

[20]Ibid., p. 6.

commuter's school (over 90%), with only 8% of the students living in the main residential district next to the campus.[21] The campus fringe is surrounded by high-valued residential and institutional areas. Student off-campus housing is unimportant in contrast to that of the University of Alberta. Parking poses the chief problem, but the paper did not elaborate on it.

The campus of Wayne State University, Detroit, is located near the centre of the city.[22] It has a campus fringe land use pattern quite different to that of the University of Alberta's. On two sides of the campus are older, residential areas with many structures in a deteriorated condition. University expansion is expected to occur in these areas. A commercial area and an industrial area occupy land on the other two sides. In the near future the campus may be surrounded by four expressways. Parking is a major problem, and parking lots have been constructed in the fringe.

Unfortunately, little detailed information was available on these three campus fringes. However, this brief comparison does indicate some of the similarities and differences which they have with the University of Alberta campus fringe.

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[21] Donn K. Haglund, University of Wisconsin-Milwaukee.

[22] Lane J. Johnson, Outline of Discussion of the Campus Fringe Area of Wayne State University, Detroit, Michigan.

CHAPTER VI

THE CHANGING CAMPUS FRINGE

The campus fringe is now entering a period of transition. This transition is caused by a number of major developments which will markedly alter the land use and population patterns. These developments include the University expansion into North Garneau; the zoning of South Garneau; and the proposed construction of a South Freeway through the campus fringe (see Figure 21). The first two developments, which already have started, are the most significant since they focus on that part of the fringe which has been influenced most by the University.

The decision of the University of Alberta in 1962 to expand into North Garneau was necessitated by the shortage of land on the campus to meet the 1980 requirements for office, lecture, and research space. During the next twenty years it is the intention of the University to acquire all the land between 110 and 112 Streets from 87 Avenue to Saskatchewan Drive for future campus expansion. The present method of purchasing individual properties as they become available will mean a gradual change in the existing patterns. Eventually, all or most of the houses will be removed to make room for new academic buildings. This will result in a completely new landscape in North Garneau.

The City's decision in 1963 to zone part of South Garneau for university commercial and high density apartment uses will result in a significant change in the sky-line in that district (Figure 21). Whereas the present University expansion program is producing only minor changes in North Garneau, the new zoning is resulting in immediate changes with

FIGURE 21

MAJOR DEVELOPMENTS
IN THE CAMPUS FRINGE
University Expansion Area
Zoning in South Garneou:
University Commercial Zone
High Density Apartment Zone
Proposed Freeway
U of A
SASK DRIVE
UNIVERSITY
SASKATCHEWAN
CPR
P
S
SCALE IN FEET
500 0 500 1000

office and high rise structures replacing many large, old houses.

The university commercial zone permits non-residential structures to be constructed along the east side of 112 Street from 83 to 87 Avenue to a depth of approximately 150 feet. The general purpose of the zone is to

> provide sufficient space...in proximity to the University of Alberta Campus and University Hospital for suitable commercial developments catering to the needs generated primarily by the Campus and the Hospital....[1]

The high density residential zone forms an L-shape along the west and south sides of the district, as Figure 21 shows. This zone permits high rise apartment structures, and its main purpose is to redevelop the district to a higher residential density than that which presently exists. The remaining residential blocks in the district are being zoned RC-1, which permits conversions to take place in a one family dwelling area.

Since the new zoning came into effect in September 1963, a number of construction projects have started in South Garneau. These include three high rise apartments and a 5-story Physicians' and Surgeons' Building. The three high rise structures of 51, 102 and 309 units are the first of possibly over 1,000 units which may be built in the area in the near future. Another high rise of 150 units will bring the total to over 600 units by 1965. The biggest project now under way is that planned for the block bordered by 85 and 86 Avenues and by 111 and 112 Streets, where a 21-story, 309-unit high rise will be built along with a 6-story, 410-stall parkade and a 75-bed Cancer Clinic.[2] At the corner of 87 Avenue and 112 Street a large dual function residence-commercial complex is planned. This consists of a

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[1]Memorandum to City Commissioners re University Commercial District, p. 5. Sept. 12, 1963.

[2]Interview with Mr. A. Hawrelak, appraiser, June 10, 1964.

3-story commercial structure with a bank, a restaurant, a book store and professional office space, and a 16-story residence tower with 150 units. A shopping centre and two floors of professional offices also will be located in the tower.[3] Most of the offices will be used by doctors who teach at the University and also have their own private practices. Facilities will be available for clinic teaching instruction and observation of patients. Most of the commercial uses planned or under construction at the present time are associated more closely with the University Hospital than with the University.

Of greatest relevance to this study is the fact that both the zoning and University expansion are taking place primarily in the inner zone of the campus fringe. Thus, the present land use and University population patterns in the area most influenced by the University will be completely disrupted and/or obliterated. This will mean a long period of readjustment in the remaining parts of the campus fringe.

In North Garneau, the extension of the campus will result in the demolition of nearly all the large, old houses. Most of the fraternities and off-campus residences which are concentrated in the district will be forced to relocate. Possible relocation areas will be influenced by the third major development - the South Freeway, proposed by the Metropolitan Edmonton Transportation Study.[4]

The proposed freeway, as shown in Figure 21, will be constructed between 109 and 110 Streets. The only possible land uses which may remain would be the commercial uses along 109 Street. The freeway is linked to

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[3] Edmonton Journal, July 29, 1964.

[4] Metropolitan Edmonton Transportation Study, Volume 2, 1963.

the north side of the City by a second high level bridge located west of the existing one. This development will markedly alter the landscape. In addition to causing further changes in the land use and population patterns in the fringe, it will also eliminate some of the more suitable rooming-house areas which could be used for the relocation of University-related uses and population.

The main University-related uses which will require relocation are the fraternities and the off-campus residences. As noted in Chapter V, proximity to the campus is, and will continue to be, the dominant factor influencing their location.[5] A number of potential relocation areas are possible for these uses. They include North Garneau east of 110 Street; South Garneau west of 110 Street; McKernan and Strathcona; and on the campus itself.

It is unfortunate that the proposed freeway will pass through the east side of Garneau since the blocks affected are potentially suitable for relocation. Many of the houses in these blocks are large, relatively new dwellings constructed since 1930, and a number of them occupy one and one-half lots. Relocation anywhere in these blocks now would be a risk and at best it would be only temporary. Therefore, most of Garneau, with the exception of the four inner blocks of South Garneau and possibly the high density zone, would be unsuitable. It seems most likely that these four blocks will be the focus of relocation, since they are the closest ones to the campus which are not affected directly by any of the three major developments.

At the present time most of the houses in these four blocks are

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[5]This was clearly brought out in replies to Questionnaire B on relocation.

single family dwellings and were constructed prior to 1930. The houses are more variable in size compared to those in North Garneau. However, there are a number of 2-story houses which could possibly be converted. The small lots are perhaps the chief disadvantage. Construction of the freeway may facilitate the invasion of the blocks by University-related uses. The increased traffic flow and accompanying noise, together with the lowering of residential land values next to the freeway would make the four blocks less suitable for family life. Such inconveniences would be less disturbing to fraternity and other rooming-house type of uses. There is a possibility that some University-related uses may locate in the high density apartment zone since it is improbable that apartments will occupy the whole zone. Although rooming-houses and fraternities are permitted in this zone, they could be displaced by an apartment. Therefore a location in one of the four inner blocks would be more desirable.

Relocation in Strathcona or that part of McKernan north of University Avenue is less likely because of the greater distance from the main campus. Although both districts have a scattering of large, old houses, many are in only fair or poor condition. In Strathcona, the trend is to replace the old,dilapidated houses by duplexes, walk-up apartments, or high rise apartments (along Saskatchewan Drive). The more desirable houses for fraternities are rapidly approaching the end of their useful life and will have to be replaced. In addition, most of the remaining newer houses are generally small and would be unsuitable for large rooming-houses.

The possible relocation of the fraternities on campus seems unlikely since space is at a premium. Fraternities, if they were on campus, would be subject to stricter University regulations. For these two reasons

campus locations would be unsuitable.

Relocation into the newer districts also is very remote since housing in these districts is either too expensive or too small. In summary, then, there are relatively few areas remaining in the campus fringe for fraternity and other University-related uses once they are displaced from their present locations. The four inner blocks in South Garneau appear to offer the best opportunities for relocation.

Population Relocation

The most significant feature relating to the three major developments is the large displacement of University persons in the campus fringe which could occur if all three developments are carried to completion.

TABLE 15

POSSIBLE UNIVERSITY POPULATION DISPLACEMENT

Development	Displacement	
	Out-of-Town Students	Total Univ. Population
University Expansion	491	596
Zoning in South Garneau	214	266
South Freeway	192	271
Total	897	1133

Table 15 shows that almost 900 of the 1,133 persons displaced are out-of-town students. This total of 900 represents nearly 40% of the out-of-town student population in the campus fringe. University expansion will cause over half of the total displacement. In addition to the total displacement,there also will be a substantial increase in the number of out-of-town students entering University. By 1980 the student enrolment will exceed 18,000, and if the out-of-town students account for 50% of this enrolment - it is now 55.9% - then accommodations for about 9,000 students will be required. In the academic year 1962-63 this segment of the Univer-

sity population numbered 4,115. The demand for accommodation will likely double during the next fifteen years. Two types of accommodation which will help house this increase are the on-campus residences and the high rise apartments.

The University hopes to provide on-campus accommodation for approximately 25% of the total student enrolment. The completion of the two new residences in 1964 for over 1200 students brings total accommodation close to this percentage. If the 25% standard is to be maintained, this will mean doubling the residence accommodation to about 4500 by 1980.

A University policy is slowly evolving which may require all first-year out-of-town students to live in residence. An indication of this trend is the two new residences, which are designed for group living suitable for freshmen. Although the individual room area is small (about 150 square feet), there are a number of other facilities, such as a lounge, kitchenette, and study area, which increase the total livable area. Each room is furnished, and the rates for room and board, including telephone, are $90 and $82 for single and double rooms respectively. These rates are determined on a 70% - 30% basis, with 70% of expenses for food and the remainder for housing.[6]

The majority of upper classmen will live off-campus. They usually prefer larger quarters and a less regimented life than that found in residences. In Table 16, a breakdown of the student enrolment by year is presented. Of the total 7,356 students, 55.9% are out-of-town students. If this percentage is used to approximate the number of out-of-town students, then some 1,460 would be in first year and another 2,650, in-

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[6]Interview with G.M. Tauzer, Director of Student Housing Services.

cluding graduates, would be in the upper class years. The latter group is almost double the former, and the majority of this group would probably live off-campus.

TABLE 16

UNIVERSITY ENROLMENT 1962-63

1st year	2612
2nd year	2092
3rd year	1490
4th year	518
5th year	29
	6741*
Graduate Students	615
Total	7356**

*This includes 3790 out-of-town students and 2951 city students.
**This includes 4115 out-of-town students and 3241 city students.

Source: University of Alberta Summary of Statistics for the Academic Year 1962-63.

With the gradual disappearance of many of the near-by rooming-houses, University students will have to find accommodations either on-campus, more distant from the campus, or in the new high rise apartments.

The high density apartment zone in South Garneau will serve mainly the University and the Hospital. It seems unlikely to attract large numbers of non-University people for a number of reasons. First, all other high density apartment zones in Edmonton are closer to the main employment centre of downtown. Second, these zones generally have a scenic view of the river valley which the Garneau zone lacks. Third, there is a present over-supply of high rise type of accommodation in the City, as indicated by the high average vacancy rate of about 20%. In some cases the rate is

25% to 30%.[7] Fourth, because of the type of occupants, Garneau high rise apartments likely will have more noise generated by the heavier-than-usual corridor traffic and by the social activities than other apartments. For these reasons, then, there should be a strong competition between apartments to obtain the University market.

An appraiser for one high rise apartment estimated that 50% or more of the units would be occupied by University people. 60% of the units will be two bedroom suites, with the remainder being one bedroom and bachelor suites. It is hoped that a group of three or four students may cooperate in renting the larger suites and thereby reduce costs. At the high rise on the corner of 87 Avenue and 112 Street, there will be approximately 150 self-contained studio suites, especially for married graduate students and staff, renting for "less than $100 per month."[8]

Expenses are an important consideration in determining the type of accommodation a person obtains. This is a major item for students without any incoming revenue during the winter. In a high rise apartment, rent would likely be $30 to $50 per person, and if the cost ratio of 70% food and 30% housing is used,then monthly expenses could exceed $100. However, some of the rooms offered in Garneau and the other older districts are renting for $30 or $35 a month even though many lack adequate light, heat, ventilation and space. According to the recent Urban Renewal Study done by the City, 9% of the total Garneau population "occupy unfit basement rooms."[9] Such sub-standard rooms are a health hazard and offer none of

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[7] Interview with Mr. A. Hawrelak, appraiser for Garneau Towers.

[8] Edmonton Journal, July 29, 1964.

[9] City of Edmonton, Urban Renewal Study 1963-64, Part 3, Plan for Renewal, p. 3.

the conveniences available in an apartment suite. Whether apartments are suitable for students is uncertain, but if the various high rise apartments are to be profitable they will have to have a significant number of students, since they form the majority of the University population.

The apartments hope to attract more of the wage earning group of the University population. This group would include faculty, staff and graduate students, as well as the hospital employees. In addition to being better able to afford apartment accommodation, this group would be the main year-round occupants. Students, on the other hand, are more mobile and most would rent only for the eight-month academic session. Therefore, if they form a significant percentage of the total number of tenants this would mean a high vacancy rate over the summer months. The University summer session would alleviate this high rate only slightly since most summer students probably would live on-campus. High rise apartment up-keep and maintenance could be costly with a large student population, and it seems unlikely that the management would like to have the apartments playing the role of a large dormitory.

In the blocks where high rise apartments are constructed, the University population should increase substantially above the number that would be displaced. This, however, will depend on the size of the high rise and the number of rooming-houses replaced. As an example, in the block with Garneau Towers (309 units), the total University population displaced was 54, but the high rise could accommodate close to 600 people if the average of 1.9 persons per unit is used.[10] If all the 1,000 units presently planned are constructed this could mean accommodation for 1,900 people, while the

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[10] 1.9 persons per high rise unit is the average in Edmonton, as noted in Chapter IV of the Draft General Plan for the City.

displacement for the whole zone would be only 266 (Table 15). This gives some idea of the potential of the zone. The demand for high rise type of accommodation will largely determine how many apartments will be built. The acceptability of this accommodation to University people, especially students, is a question which can be answered only after occupancy begins. As the following discussion brings out, it is doubtful whether rental accommodation in the remainder of the campus fringe will be able to meet the increasing demand. Therefore, the high rise apartments close to the campus could be a major source of accommodation in the future.

The changes now taking place in Garneau will result in a gradual redistribution of the University population. The new high rise apartments will be able to accommodate only a portion of the displaced population and the yearly increase of out-of-town students. With the loss of the main dormitory area there will be increased demand for rooms in the remainder of the campus fringe.

Little increase in accommodation can be expected in Windsor Park and Belgravia. There is little likelihood of a major invasion of University-related uses into these districts. The composition of the University population should remain somewhat the same as at present, with the number of out-of-town students gradually increasing. A brief summary of the characteristic features of the two districts will explain this conclusion.

Both Windsor Park and Belgravia, as planned neighbourhood units, have been prime residential areas in Edmonton for the past fifteen or twenty years. The population tends to be somewhat older and less mobile, i.e., less subject to frequent moves than comparable newer districts. Many influential people reside in the districts and their political power would be adequate to resist the invasion of various uses such as fraternities,

rooming-houses and University traffic. The latter probably would be stopped by the extensive use of No Parking signs on the inner streets. The construction of a football stadium or the engineering complex on the west side of the campus would be detrimental to the houses directly opposite. This may result in a gradual increase in the number of roomers in the blocks next to the campus. It should be remembered, however, that up to three roomers per single family dwelling is permissible in a restricted residential district. There is little possibility that rooming houses will develop here, because of the zoning regulations and also because of the small rental return for the capitalization of the house. This is in sharp contrast to the situation in Garneau. Economically, it would be unfeasible, if not impossible, for a fraternity or other off-campus residence to purchase a house in Windsor Park even if this was permitted. The new districts will continue to be unsuitable for University-related uses and for accommodating out-of-town students.

McKernan has only limited possibilities for housing more University persons. This is the result of the nature of the district and the type of zoning present. Most of the blocks north of 76 Avenue are zoned RC-1, while those south of this Avenue are zoned R-1 (Figure 15).

Taking the RC-1 zone first, it has the largest number of University persons per block in the district, as Figure 3 indicates. In the blocks north of University Avenue there is a scattering of large, old houses, most of which are in fair or poor condition (Figure 16). During the next twenty years most of the houses will have reached the end of their useful life and probably will be replaced. Thus, the houses with potentially the largest holding capacity will gradually disappear, leaving houses which are generally smaller and more variable in size. The relatively high

density of the University population south of the campus is due to the availability of basement suite accommodation, which is permitted in the RC-1 zone. This is the main type of rental accommodation available. This zone appears to be near capacity and will not be able to accommodate a substantial increase.

Houses in the R-1 zone are mainly under one and a half storys, with most of them being occupied by families with growing children. Because of the favourable neighbourhood environment this is likely to continue. Rental accommodation is even more restrictive in this zone because basement suites are illegal. It is still possible to rent rooms without cooking facilities for up to three persons but it is not as satisfactory. Because of the large number of families with children there would be only limited accommodation available in the zone. The potential increase in the University population for McKernan, therefore, would seem to be small.

The potential in Strathcona and Queen Alexandra is similarly limited. Both districts are characterized by housing of mixed age and of variable size. During the next twenty years almost half of this housing will be nearing the end of its useful life and will need replacement. Already many of the houses are showing signs of deterioration.

Much of the area north of University Avenue is zoned R-4, or medium density. This zone permits such uses as conversions, duplexes and walk-up apartments. At the present time there is a gradual replacement of old single family dwellings - mostly by walk-up apartments. Both Strathcona and Queen Alexandra have a scattering of large, old houses, many of which have been converted into rooming-houses. These, too, will gradually require replacement. Most of the remaining houses are smaller and lack the holding capacity of the older ones. Thus, the houses capable

of accommodating the most boarders are disappearing, leaving only the smaller houses and new apartments which are less suitable for rental to students.

The area south of University Avenue is even less satisfactory for rooming accommodations although it is an RC-1 zone. This is due partially to the generally small houses, and partially to the greater distance to the campus. The area has attracted relatively few University persons for these reasons, as Figure 3 shows.

With the disappearance of North Garneau as the main dormitory area in the fringe, there will probably be an increased demand for accommodation in Strathcona, and to a lesser degree, Queen Alexandra. However, as noted above, with the type of housing available in these districts it is doubtful whether they could support a substantial increase in University population.

University expansion and the proposed freeway will eliminate all the residential land in Garneau, with the exception of those blocks between 110 and 112 Streets from 82 to 87 Avenue in South Garneau. This small area offers the best opportunities for relocation of University-related uses, such as fraternities, and it also will have the largest concentration of University people in the campus fringe. Although the extent of the future inner zone is unknown, it will centre on this small area because of its close proximity to the campus.

The high rise apartments in South Garneau could dramatically increase the University population if this type of accommodation proves satisfactory. Because of the more variable size of the housing in the four inner blocks, it does not seem likely that they will exceed the population totals of some of the blocks in North Garneau. The University population for South Garneau could reach 1,500 to 2,000 by 1980, with

graduate students, faculty and staff accounting for a much higher percentage than they do now (Table 3). The out-of-town student population could be 1,000, while the number seeking accommodation elsewhere in the City could be 3,000 to 4,000 in 1980. The demand for rooms will be greatest in the campus fringe but it is doubtful whether the fringe will be able to accommodate even a half of this number.

At the present time, just over 1,300 out-of-town students are located in the fringe, excluding Garneau. McKernan alone has over 500. This district appears to be nearing its potential holding capacity and possibly could house another few hundred students. Most of the other districts also offer only limited possibilities for population growth. Windsor Park and Belgravia may have an increase of one or two hundred but this seems high in view of the nature of the two districts. The growth potential in Strathcona and Queen Alexandra also may be relatively small - in the order of several hundred students. Taking into account the displaced population resulting from University expansion and the proposed freeway, the out-of-town student population may reach about 3,000 by 1980. This would be an increase of less than 1,000.

The future University population distribution could exhibit similar characteristics as the present one. The largest concentration will be in South Garneau, the district nearest the main academic campus. High densities will also occur along the east and south sides of the campus. With the expected population increase there will be a gradual filling in of much of the remainder of the fringe, with the lowest densities still being on the outside. If the proposed freeway is built, the time required to reach the campus by car would be reduced. The freeway thus could produce a north-south elongation of the University population - south of 72 Avenue

and north across the river. Because of the inability of the fringe to accommodate a significant proportion of the future increase, many students may obtain accommodations in adjacent districts to the east and south. This may result in an extension of the campus fringe boundary in these directions. Although the campus fringe will continue to have a high percentage of the total number of out-of-town students, this percentage will gradually decrease in the future.

15. A new 21 storey high rise apartment under construction. Education Building in background.

16. View along 112 Street with 12 storey high rise on 82 Avenue and a 5 storey Physician's and Surgeon's Building across from the University Hospital.

17. Walk-up apartments replace old single family dwellings in Strathcona.

18. The new residences with Lister Hall in the foreground.

residents are least influenced by the location of the University, although

CHAPTER VII

CONCLUSIONS

The University of Alberta, since its inception in 1908, has been an important influence in the campus fringe. This is seen in the early, rapid growth of Garneau directly opposite the newly developing campus; in the development of the campus fringe as a major rooming area for University people after World War II; and in the present beginnings of physical penetration by the University into a part of the fringe.

The residential districts adjacent to the University have provided an excellent opportunity for a campus fringe study. The characteristics of these districts, and their location in relation to the campus, have influenced the distribution patterns of the University population and University-related uses. Such characteristics as the size of houses, and the age and condition of houses, are important factors affecting the amount and availability of rooming accommodations in the fringe.

The University group who has influenced most the development and extent of the campus fringe as a rooming area is the out-of-town students. It has been the demand for rooms by this large group which has resulted in the extensive housing accommodation found in the residential areas next to the campus.

Proximity to the campus is particularly important to out-of-town students and faculty for reasons of convenience and economy. Population concentrations are greatest immediately adjacent to the campus, and decrease quite rapidly with distance from the campus. City students and staff distributions are least influenced by the location of the University, although

they also tend to show a slight concentration closer to the campus. All the categories, with the exception of the non-permanent students, have a dispersed distribution pattern; while the non-permanent student distribution is characterized by a major concentration along the east and south sides of the campus. This group is found mainly in the older districts of the fringe where rooming accommodations are available. Zoning regulations and the high quality housing in the newer districts have limited the possibility of rooming accommodations in those areas.

With the exception of Garneau, the University population has only slightly modified the district population structures. In Garneau, where the University population comprises almost 40% of the district population, the University population has been a factor influencing such population characteristics as marital status, age groups and sex ratio.

A close relationship exists between the University population distribution and the amount of business transacted with commercial establishments in the fringe. It was found that the influence of the University could best be measured in terms of the percentage of University customers and in the intensity of seasonal fluctuations in business which result from the academic sessions. Fluctuations were influenced by the nature of the University population served and by the distance from the campus. University business tends to decrease with distance from the campus. Tuck Shop, directly across from the campus, was the most University-oriented commercial structure in the fringe.

The distribution of University-related uses,most of which are housing accommodations, indicates the areas where University influence has been greatest. This has been in the older residential areas of the fringe with the major concentration of these uses in Garneau. It is in these

districts where the majority of large, old houses are located. These houses have been most susceptible to conversion into rooming-houses, fraternity houses and off-campus residences. The largest number of conversions have occurred in Garneau, which is directly across from the main academic complex. Garneau, because of its close proximity to the campus and its significant numbers of large, old houses, has attracted all the fraternities and off-campus residences. These University-related uses accommodate many students and they are a contributing factor to the high density University population found in some blocks.

Traffic congestion and parking in the campus fringe has been restricted to Garneau. Easy access to the main academic buildings has made this district a desirable parking area. University traffic has contributed to the functional obsolescence of Garneau. With the increasing University enrolment and car registration, parking in the campus fringe will grow. Windsor Park may be subject to invasion by University traffic in the future.

The population distribution patterns based on a house to house survey bring out many significant relationships. First, it indicates the differences between the various population categories. Second, it provides useful information on the size of accommodations per dwelling; on the number of dwellings with University people; and on the extent of rooming accommodations in the campus fringe. Third, it shows the major rooming-house areas, and the areas with only limited rental accommodation. This survey forms the basis of a comparative analysis of the different parts of the campus fringe.

The campus fringe may be subdivided into an inner and outer zone. The former is characterized by the high density of the University popu-

lation per block and by the major concentration of University-related uses, while the latter has lower population densities and few University-related uses.

Three major developments will eliminate most of the inner zone as it exists today, and they will cause a substantial displacement of the University population. These developments are University expansion; zoning in South Garneau; and a proposed South Freeway. The result will be the shift of the inner zone into South Garneau, which offers the best possibilities for relocation of such uses as fraternities and off-campus residences, and for housing a large number of University people. High rise apartments will become important as a source of accommodation when many of the rooming-houses are demolished.

During the next fifteen years the University enrolment will more than double. The demand for rooming accommodation in the campus fringe will increase greatly but the ability of the fringe to accommodate a large population increase is doubtful. This may result in the expansion of the campus fringe to take in the districts to the east and south but when this occurs is difficult to predict.

This thesis has attempted to discover the characteristics of the campus fringe, and to delimit the fringe according to the distribution of the University population and University-related uses. A detailed examination of the residential districts adjacent to the campus formed a necessary part of the thesis so that the influence of the University on the campus fringe could be determined. It is hoped that the methodology used in this thesis will be useful for studying the campus fringes of other universities.

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APPENDIX A

DATE OF COMPLETION OF CAMPUS BUILDINGS

A) Academic Campus

Athabasca Hall	1911
St. Stephen's College	1912
Assiniboia Hall	1913
Pembina Hall	1914
Arts Building	1915
South Laboratory	1918
North Laboratory	1919
Medical Building	1921
St. Joseph's College	1927
Cafeteria	1943
West Wing, Medical Building	1947
East Wing, Medical Building	1948
Students' Union Building	1950
Rutherford Library	1951
Engineering Building	1953
Agriculture Building	1954
Administration Building	1957
Biological Sciences Building	1958
Physical Education Building	1960
Medical Building Addition	1961
Engineering Building Addition	1961
Math-Physics Building	1961
Chemistry Building	1961
New Education Building	1963
Armed Services Building	1963
Nuclear Research Centre	1963
Structural Engineering	1963
D.E. Cameron Library	1964
New Residences	1964
Household Economics	1964
Faculty Club	1964

B) Hospital Complex

Strathcona Hospital (became University of Alberta Hospital in 1922)	1914
Hospital additions	1923 and 1930
Colonel Mewburn Pavilion	1945
Provincial Laboratory of Public Health	1950
Aberhart Memorial Sanitorium and Residence	1952
Cancer Research Clinic	1952
Hospital additions	1957 and 1961
House-Staff Residence	1958
Nurses' Residence	1958

C) Other Buildings

Alberta Research Council Building	1955
Jubilee Auditorium	1955
University of Alberta Service Buildings	most are post 1955

APPENDIX B

PROCEDURAL TECHNIQUES

A) Sources of Material

(a) Civic Census of Edmonton

The Civic Census is an annual enumeration carried out in March and April. The City is subdivided into polling divisions. Unfortunately, the polling divisions for the campus fringe do not coincide with the seven district boundaries delineated. However, by determining the block populations it is possible to calculate the totals for each district.

The census divided the population into two groups: those under 21 years of age; and those 21 years and over. The main advantage to this study is the fact that the census includes the University population attending the winter session.

(b) Metropolitan Edmonton Transportation Study (M.E.T.S.)

Closely associated with the polling division boundaries are the M.E.T.S. traffic zones. Most of the statistics on land use acreages used in this study are based on the traffic zones. The principal sources for the land use information were the Research and Urban Renewal Sections of the City of Edmonton Planning Department.

(c) Census of Canada 1961

The Census of Canada is enumerated once every ten years. The last census was in 1961, and it was taken in the months of July and August of that year. This means that many of the out-of-town

students who resided in the campus fringe during the winter session would not be included. However, the smaller number of summer students would be included. The census tract boundaries did not coincide entirely with either the polling divisions or districts in the campus fringe. This was especially critical in the case of census tract 22, which included Windsor Park and Garneau. Both these districts are markedly dissimilar in character. Less serious was the combination of McKernan and Parkallen in census tract 29. The latter district is outside the campus fringe, but because it is of comparable age and character to McKernan the statistics are still meaningful.

The main advantage of the census is the detailed information on population characteristics which were unavailable from other sources.

(d) University of Alberta

Statistics on the University population were obtained from the 1962-63 registration forms for the students, and from the staff and faculty lists for the same period.

B) The University Population

The University population was subdivided into six categories: undergraduate non-permanent, undergraduate permanent, graduate non-permanent, graduate permanent, staff, and faculty. The distributions of these six categories are presented in Figures 8, 9, and 10.

Incomplete student registration forms prevented the plotting of

a small percentage of the total student enrolment. It was, therefore, possible to obtain only a close approximation of the exact University population.

Every student, faculty and staff member was plotted on the map in approximately the correct location of the listed address. In Garneau the distributions were done on a house to house basis, and if time had permitted the other districts should have been done similarly. This technique is particularly useful in locating the large rooming-houses, the areas where rental accommodations are available, and the actual number of houses providing accommodations for students.

Mention should also be made of those people who live in the campus fringe and are employed by the University Hospital or fraternities and other off-campus residences. In Garneau alone, 113, aged 21 years or over, worked at the Hospital. These people were not mapped but they are definitely influenced by the proximity to the Hospital.

Another factor which would have been useful considering is the distribution of married students, faculty and staff, and the number in each family. This would serve three purposes. First, it would give a truer picture of the actual numbers of people directly affected by the University. Second, it would indicate the different size of accommodations required to meet the varied family size, and third, it would show whether married people tend to desire accommodations close to the University. Graduate students are particularly attracted to the residential areas close to the campus and with the rapidly growing Faculty of Graduate Studies,there is likely to be an increasing percentage of married students attending the University.

C) Measuring the Population Distribution by Distance

To measure how distance from the campus influences the distribution of the University population, lines at 1,000-foot intervals were drawn parallel to the campus boundary as shown in Figure 8 of Chapter III. For convenience, the southern boundary was chosen as a line drawn along 81 Avenue. This campus boundary, which included the Hospital complex, was used since it was felt that the relative impact of the University could be measured best by starting the intervals where the residential districts directly adjoined the campus. It must be noted that students residing south of the campus have an additional 2,000-foot distance to travel before reaching the main academic complex.

As the width of residential development is not the same on all sides of the campus, the percentages are most meaningful up to a distance of 3,000 feet from the campus.

APPENDIX C

QUESTIONNAIRES

QUESTIONNAIRE A - RESIDENCES

1. Name _____

2. Address _____

3. How long have you been resident at the above address? _____

4. Was proximity to the University of:

   1) major importance 2) minor importance or 3) of no importance

   in locating in the district? Please underline one of the above.

5. Has any person in the house been associated in any way with the University as a student, faculty member or employee? _____

   If so, as a (i) student _____
   (ii) faculty _____
   (iii) employee _____

6. Is any person in the house presently associated with the University? _____

   If yes, how many, and from which categories in question 5? _____

7. Do you own or rent the house? _____

8. Do you have rooms to rent? _____ How many? _____

9. When were the rooms built or converted for lodgers?

   (i) 1960-63 _____
   (ii) 1950-59 _____
   (iii) 1945-49 _____
   (iv) 1940-44 _____
   (v) before 1940 _____

10. How long have you been renting rooms? _____

11. Are the lodgers mainly University people? _____

    (i) students _____

    (ii) staff and faculty _____

    (iii) both (i) and (ii) _____

12. Are the lodgers connected with the University of Alberta Hospital? _____

13. How many lodgers do you have?

    (i) 1 _____
    (ii) 2 _____
    (iii) 3-5 _____
    (iv) 6-10 _____
    (v) 10 and over _____

I would greatly appreciate it if you would return this at your earliest convenience.

QUESTIONNAIRE B

UNIVERSITY-ORIENTED HOUSES

1. Name of Organization _____

2. Address _____

3. When was the house obtained? _____

4. Is the house owned or rented? _____

5. How was the house location chosen and for what reasons? _____

_____

_____

6. How many people reside in the house?

   (i) all year _____

   (ii) during university session _____

7. Has the house been converted (rooms built) since it was obtained to accommodate more boarders? _____ If so, when? _____

8. Has the organization always been in this house? _____
   If not, what other locations were used?

_____

_____

9. If the organization had to move where would it try to locate?

_____

I would greatly appreciate it if you would return this questionnaire at your earliest convenience.

APPENDIX D

SELECTED STATISTICS FOR QUESTIONNAIRE A

	Questionnaires Delivered	Returned	
North Garneau (NG)	126	60	
South Garneau (SG)	138	68	
Belgravia (B)	121	59	
McKernan (M)	136	60	
Strathcona (S)	94	36	
Windsor Park (WP)	28	14	
Queen Alexandra (QA)	57	17	
Total	700	314	or 45.0%

1. Length of occupancy by per cent

District	< 1	1-5	6-10	11-25	26 +
NG	13.3	20.0	18.3	16.7	31.7
SG	19.1	19.1	19.1	19.1	27.6
B	20.3	18.6	13.6	42.4	1.7
M	13.3	33.3	13.3	35.0	5.0
S	11.1	16.7	19.4	41.7	11.1
WP	7.1	21.4	28.5	28.5	14.2
QA	5.9	17.6	5.9	52.9	17.6
Total	15.0	21.6	16.6	30.9	15.3

2. Importance of location by per cent

District	Major	Minor	No.	N/R
NG	80.0	13.3	6.7	
SG	76.4	8.8	14.7	
B	66.1	22.0	11.9	
M	65.0	13.3	21.7	
S	44.4	38.9	16.7	
WP	64.3	28.6	-	7.1
QA	70.6	11.8	17.6	
Total	68.5	17.5	12.7	1.3

3. Association with the University by per cent

District	Present	Past
NG	66.7	93.1
SG	54.4	88.2
B	52.6	84.8
M	66.7	86.2
S	52.8	86.1
WP	64.3	92.9
QA	53.0	88.2
Total	58.9	88.2

4. Year rooms built or converted by per cent

District	Don't know	Before 1940	1940 -44	1945 -49	1950 -59	1960 -63	N/A
NG	8.3	8.3	1.7	5.0	15.0	5.0	53.3
SG	7.4	2.9	4.4	1.5	4.4	8.8	70.6
B	3.4	-	-	5.1	18.6	8.5	62.7
M	3.3	-	1.7	10.0	21.7	3.3	56.7
S	11.1	2.8	-	5.6	16.7	11.1	52.8
WP	7.1	-	-	-	-	7.1	85.8
QA	-	11.8	5.9	23.5	11.8	5.8	41.2
Total	6.0	3.2	1.9	6.0	14.0	7.0	60.5

5. Number of lodgers per house by per cent*

District	1	2	3-5	6-10	11 +	N/A
NG	11.7	11.7	16.7	8.3	1.7	50.0
SG	7.4	8.8	5.9	2.9	2.9	70.6
B	6.8	13.6	6.8	-	-	72.9
M	6.7	11.7	18.3	6.7	-	56.7
S	11.1	22.2	8.3	5.6	-	52.8
WP	7.1	-	-	-	-	92.9
QA	-	17.6	5.9	11.8	-	64.7
Total	8.0	12.4	10.5	4.8	1.0	63.3

*Most of the lodgers are University people.

APPENDIX E

FRATERNITIES AND OFF-CAMPUS RESIDENCES

(a) FRATERNITIES

Women's	Address	Size of Accommodation
Delta Gamma	11142 - 88 Avenue	13
Kappa Alpha Theta	10958 - 85 Avenue	18
Pi Beta Phi	8903 - 112 Street	12
Alpha Gamma Delta*	9109 - 112 Street	-
Men's		
Delta Kappa Epsilon	11144 - 87 Avenue	9
Delta Upsilon	11153 Saskatchewan Drive	20
Kappa Sigma	11003 - 90 Avenue	13
Lambda Chi Alpha	11131 - 88 Avenue	17
Phi Delta Theta	11117 - 91 Avenue	15
Phi Kappa Pi	11122 - 87 Avenue	14
Sigma Alpha Mu	11138 - 88 Avenue	12
Zeta Psi	11143 - 88 Avenue	14
Theta Chi*	11108 - 90 Avenue	-
Delta Sigma Phi*	11036 - 88 Avenue	-

* newly organized fraternities

(b) OFF-CAMPUS RESIDENCES

Lutheran Student Centre	11143 - 91 Avenue	0
St. Jude's	8527 - 112 Street	17
Mary Manor	11145 - 90 Avenue	10
Brescia Hall	11149 - 91 Avenue	19
St. John's Institute	11024 - 82 Avenue	79
St. Josaphat's	8820 - 111 Street	20
St. Aidan's	11009 - 89 Avenue	11
S.C.M. House	11136 - 90 Avenue	6
Club Internationale	11121 - 89 Avenue	-
Garneau House	11108 - 90 Avenue	16
University House	9109 - 112 Street	16

FIGURE 8

UNIVERSITY POPULATION 1962-63

• Undergraduate Students Non-permonent
◦ Undergraduate Students Permonent
• = one student
● = five students

1000 Foot Intervals from the Edge of the Compus

SCALE in FEET
500 0 500 1000

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